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City of Atwater General Plan



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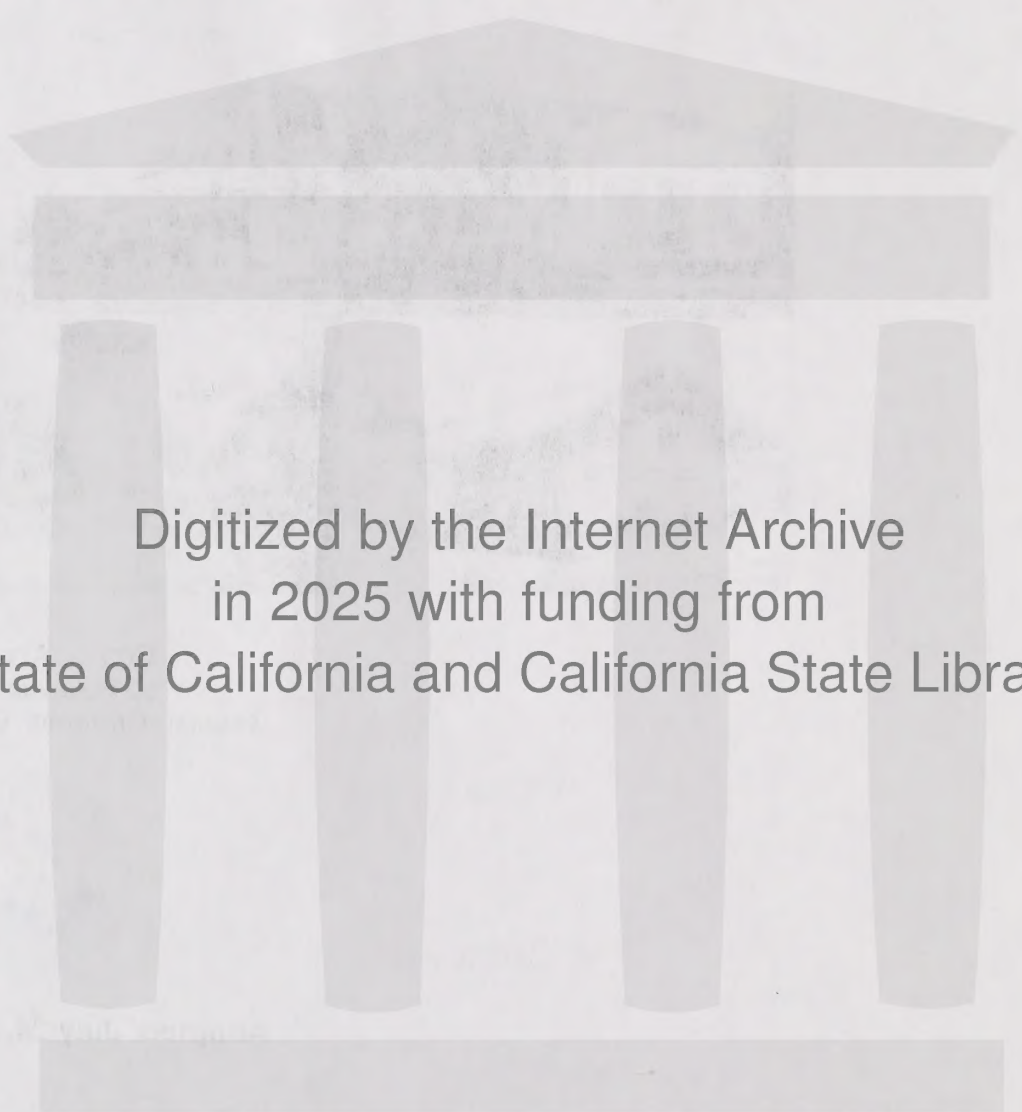


Adopted: July 24, 2000

Prepared by:

PMC

PLANNING MUNICIPAL
CONSULTANTS



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City of Atwater General Plan

Prepared for:

CITY OF ATWATER
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Atwater, CA 95301

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**ADOPTED
JULY 24, 2000**

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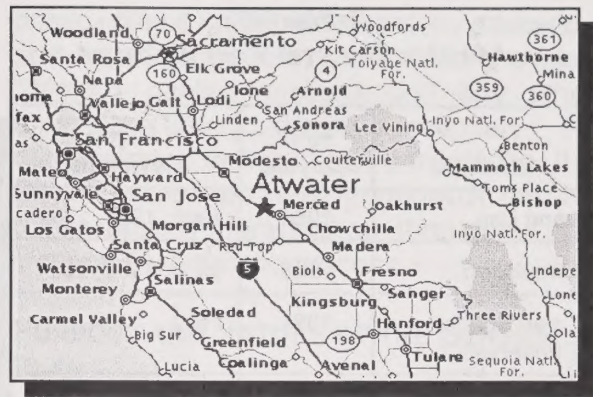
GENERAL PLAN INTRODUCTION

This is the City of Atwater's 2000 General Plan. It is a public document that presents a vision of the city in the future, arising from a consensus by the community. It is a guide for both citizens and City officials to be used in discussions about community growth and development, and provides a framework for decisions on those issues. While physical development is not the only factor in the creation of a livable and attractive community, it is one of the most significant factors. Therefore, the General Plan focuses primarily on the physical development of the community. The anticipated horizon for this General Plan is the year 2020. However, periodic review and amendment of the Plan should occur to ensure that it remains accurate and consistent with the community's desires, as changes in circumstances or unexpected opportunities occur.

It is a premise of this General Plan that growth and development are desirable. It is also a premise that growth development need guidance so as to maximize their benefits and minimize their impacts. The General Plan provides the framework necessary for decision-makers to handle future development proposals and challenges in a manner that is consistent with the community's desires and values as a whole. The General Plan is not a mere statement of intentions, but an action plan to be followed by the City from the moment of its adoption.

COMMUNITY LOCATION AND CHARACTERISTICS

The City of Atwater is located in Merced County in central California. It is situated within the San Joaquin Valley, part of the Central Valley. The City is approximately 8 miles northwest of the City of Merced, the county seat. State Highway 99 goes through the southern portion of the City, and the former Castle Air Force Base lies to the



Regional Location

northeast. The population of Atwater, according to January 1998 Department of Finance estimates, is 21,992.



City of Atwater

BACKGROUND FOR PLANNING

As noted in Table 1-1, The City of Atwater adopted its first General Plan in 1958. Recent updates to the Land Use, Circulation, Open Space/Conservation, and Housing elements occurred in 1992. However, the City's Safety, Noise, and Scenic Highways elements have not been updated since 1981.

**Table 1-1
Atwater General Plan History**

Element	First Adopted	Major Revisions
Land Use	1958	1968, 1981, 1992
Circulation	1958	1968, 1982, 1992
Open Space/ Conservation	1981	1992
Housing	1981	1981, 1986, 1992
Noise	1981	
Safety/ Seismic Safety	1981	
Scenic Highways	1981	
Southwest Area Plan (Applegate BP)	1987	1991
Downtown Bus. District Plan	1979	

As described above, previous planning efforts have generally taken a intermittent approach with modifications to individual and/or groups of elements occurring periodically. The 2000 General Plan update has taken a comprehensive approach which revises all elements at once.

Although the City's Land Use and Circulation Elements had been updated as recently as 1992, a number of major events have occurred within Atwater itself and the region which have led to the need for a comprehensive look at the community. These events include:

- The closure of Castle Air Force Base as a military facility and its conversion to civilian uses and development.
- The development of a prison facility just northeast of Castle Airport.
- The selection of a site for a new UC campus northeast of Merced near Lake Yosemite.

- Plans to develop a University Access System that will link Atwater and the City of Merced to the University.
- Plans to construct a new interchange at the intersection of Highway 99 and Westside Boulevard.

Some of these events have created impacts on the economic foundation of the City, and others have created some significant opportunities. In order to ensure that the City's General Plan accurately reflected these changes in circumstances and presented the community's current desires relative to growth, the City initiated a comprehensive General Plan update in 1998.

PUBLIC PARTICIPATION IN THE GENERAL PLAN UPDATE PROCESS



To assist in the General Plan update process, the City utilized an 18 member Technical Work Group made up of representatives from various City Departments, and other local public agencies including: the City and County of Merced, the Merced County Association of Governments (MCAG), and the Castle Joint Powers Authority (CJPA). The core group's input was also augmented by representatives from local school districts, businesses, and community organizations.

The group provided input to City staff and the General Plan consultant, through survey responses and other information requests, relative to existing conditions in Atwater and issues of both local and regional concern. Input from the Working Group and other individuals and agencies was used to prepare the first two publications developed as part of the General Plan update process. These documents, referred to as, the *Due Diligence Working Paper for the Atwater General Plan Update* and *General Plan Market Study* were published in November of 1998.

Findings of the *Due Diligence Working Paper* and the *Market Study* were used to develop a

number of growth scenarios for lands to the west, east, and south of the City. These scenarios and the findings of the documents were presented at the first of two City-wide public workshops on February 24, 1999.

After considering input from the first City-wide workshop, City staff and the consultant team began preparation of the "Preferred Land Use Alternative" for the City. This alternative incorporated desirable aspects from a number of the alternatives to form a composite plan. This plan was qualitatively tested by the consultant team through the preparation of an *Opportunities and Constraints* analysis. The findings of the analysis and the recommended "Preferred Alternative" were presented to the Planning Commission at another public hearing conducted May 26, 1999.

Following Planning Commission selection of the "Preferred Alternative," the consultant team distributed a Notice of Preparation for the General Plan EIR and solicited input regarding potential environmental issues through two public scoping sessions.

After the completion of a number of technical studies, the *Public Review Draft General Plan* and accompanying *General Plan Draft Environmental Impact Report (EIR)* were released for public review and comment in April 2000.

A number of public meetings were also conducted in the communities of Franklin-Beachwood, McSwain, and Winton during the public review period to facilitate additional community input.

Modifications to the Plan and the Final EIR, which responds to environmental comments, were considered by the Planning Commission and the City Council during a series of public hearings leading up to EIR certification and Plan adoption on July 24, 2000.

California Government Code Section 65351 states that during the preparation of the General Plan, "...opportunities for the involvement of citizens, public agencies,

public utility companies, and civic, education and other community groups" be provided "through public hearings and any other means the City deems appropriate." As demonstrated in the above paragraphs, the City of Atwater has actively sought citizen and public agency participation throughout the General Plan update process.

PURPOSE AND NATURE OF THE GENERAL PLAN



Under State law, all cities and counties must prepare a general plan. The general plan is a legal document that serves as the "constitution" for a community's land use and development activities.

California Government Code Section 65300 requires that the general plan be a comprehensive, long-term document for the physical development of the city.

State law specifically requires that the General Plan address seven general topics or "elements." These mandatory elements include:

- *Land Use* - Designates the general distribution and intensity of all uses of land in the community.
- *Circulation* - Identifies the general location and extent of existing and proposed major transportation facilities. This element also addresses general infrastructure such as sewer, water, storm drainage facilities, and utilities.
- *Housing* - Involves a comprehensive assessment of current and projected housing needs for all economic segments of the community. This element also embodies policies and programs for providing adequate housing.
- *Conservation* - Addresses the conservation, development, and use of natural resources, including water, forests, soils, rivers, and mineral deposits.

General Plan Introduction

- *Open Space* - Identifies plans and measures designed to preserve open space for natural resources, the managed production of resources, outdoor recreation, and public health and safety.
- *Noise* - Identifies and appraises the existing and projected noise environment. Includes policies to protect the community from the harmful effects of noise.
- *Safety* - Establishes policies and programs to protect the community from risks associated with seismic, geologic, flood, and fire hazards.

In addition, Government Code Section 65303 allows for the inclusion of other elements in the general plan which, in the judgment of the local legislative body, relate to the physical development of the City. All elements of the general plan, whether mandatory or optional, have equal legal status.

DISCUSSION OF PLANNING BOUNDARIES

According to California Government Code Section 65300, the General Plan must cover the territory within the boundaries of the adopting city, as well as "any land outside of its boundaries which in the planning agency's judgement bears relation to its planning."

When establishing its Planning Area, cities typically use their Sphere of Influence, as established by the Local Agency Formation Commission (LAFCO), as a starting point. However, in many cases it is desirable to extend the Planning Area to lands outside the Sphere when development in those locations could either impact the City or affect its planning.

Since 1978, the "Urban Centered Concept" has been a guiding land use principle for the County of Merced. According to the Merced County Year 2000 General Plan "the urban centered concept is directed at utilizing cities and unincorporated communities or centers to accomplish anticipated urban expansion in an orderly manner, based on the ability of these communities to furnish public services along with land needs based on population

demands in balance with employment-generating land uses." The goal is, "to provide for intensive urban development and to protect agricultural and open space land from sprawling urban development."

The County applies the urban centered concept through the designation of Specific Urban Development Plans (SUDP), Rural Residential Centers (RRC), Highway Interchange Centers (HIC), and Agricultural Services Centers (ASC).

Although the City agrees with the overall principle of the Urban Centered Concept, Atwater's 2000 General Plan utilizes the terms and boundaries described within the state General Plan Guidelines to define its planning related boundaries. These terms include:

City Limits - Incorporated territory where land use is controlled by the City.

Sphere of Influence - Incorporated and unincorporated territory which encompasses the City's ultimate probable service area.

Planning Area - Unincorporated territory bearing a relation to the City's Planning.

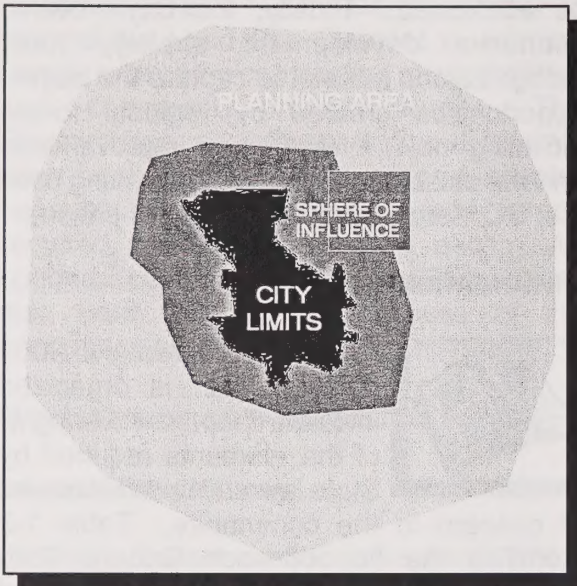


Figure above illustrates the relationship between city limits (center), sphere of influence and planning area. Note: boundaries are conceptual only for this illustration.

Portions of the Planning Area outside of RRC's and SUDP's identified by the County of Merced have been noted as "Areas of Interest" to lay the groundwork for future land use agreements with the City and County of Merced.

GENERAL PLAN THEMES

The overriding themes of the City of Atwater's 2000 General Plan are *transition* and *diversification*. The primary challenge facing the City is how to successfully guide Atwater's transformation from a former military based community to one that appeals to a broad range of businesses, industries, and residents.

Atwater has long been recognized for its friendly small-town atmosphere, which is a valued characteristic that is desirable to maintain. However, in order to maintain a sustainable community, it must also find a way to attract a variety of industries, local and region serving commercial development, and provide housing opportunities that will appeal to all demographic categories ranging from university students and faculty to retirees and young families.

In order to meet these objectives, the General Plan focuses on a number of basic themes that are reflected in goals and policies throughout the document.

Identification of Future Growth Areas - With the exception of the former Castle Air Force Base, now referred to as the Castle Airport and Aviation Development Center (CAADC), Atwater's existing Sphere of Influence provides little opportunity to accommodate future growth. Through the General Plan update, the City has identified four primary growth areas and a new proposed Sphere of Influence designed to meet both short- and long-term development demands.

Land use designations applied within these growth areas have been designed to accommodate a variety of employment generating uses, small- and large-scale commercial development, and provide a broad range of housing opportunities for existing and future residents.

Maintenance of Community Identity - Atwater is surrounded by a number of small unincorporated communities including Winton to the north, Franklin-Beachwood to the east, and the McSwain area located directly south of the City. In addition, the incorporated City of Merced is located approximately 8 miles to the southeast. One of the important focuses of the Plan is to lay the groundwork for agreements with the City and County of Merced that will ensure the establishment and maintenance of long-term agricultural and open space buffers between the referenced communities.

Community Entrances - Most visitors to the region view Atwater from the Highway 99 corridor. Few landscape improvements currently exist along the corridor or at key entrance points into the City. The Plan identifies a number of gateways into the community and discusses opportunities to enhance their visual appearance, as well as the view of Atwater from Highway 99.

Quality Development - The appearance of a community can directly affect the attitudes of

its citizens and how it is viewed by visitors and potential investors. One of the cherished characteristics of older residential neighborhoods within Atwater is their tree-lined streets. As Atwater continues to grow, it is important that similar features be incorporated into new development. Throughout the City, enhanced landscape and design standards are encouraged to improve the appearance and quality of both newly developed and redeveloped areas.

Revitalization and Enhancement of the Downtown - Downtown Atwater, like many other downtowns across the country, continues to struggle to maintain its economic viability and emphasis as the core of the community. Implementation of a variety of strategies will be necessary to bring new life and focus to the downtown. These include land use planning strategies, redevelopment activities, and aggressive marketing.

As part of this effort, it needs to be acknowledged that Downtown will not compete with regional-scale commercial development. Rather, Downtown should focus on its role as the cultural, entertainment, government, office, financial, and social center of the community.

Strategies designed to achieve this goal include: applying land use classifications and policies that will result in a compact mixed-use development pattern; investing in physical improvements to enhance the pedestrian orientation and distinctive appearance of downtown streets and places; improving access to downtown buildings; broadening the allowable range of uses within downtown districts; and creating physical spaces to accommodate social activity.

Economic Development - As the City transitions from the historic economic foundation generated by the former Castle Air Force Base, it must focus its economic development efforts on both the retention and expansion of existing businesses, as well as the attraction of new industries. Leakage of retail sales activity to nearby Merced has also been a long standing dilemma which needs to

be addressed. Finally, the City's overall economic development strategy must recognize and attempt to capture the market opportunities created by regional forces including major infrastructure improvements and the establishment of region serving uses (i.e. UC Merced and a new federal prison).

ORGANIZATION OF THE PLAN



The City of Atwater's 2000 General Plan is organized into nine chapters covering all of the elements required by State law and optional issues of concern to the community. Table 1-2 identifies the title of each General Plan Chapter, its mandatory or optional status, and most closely related elements.

Table 1-2
Organization of the
Atwater General Plan

Chapter	Legal Status	Most Closely Related Chapters
1 - Introduction	N/A	N/A
2 - Land Use, Public Facilities and Community Infrastructure	Mandatory	All
3 - Circulation	Mandatory	Land Use, Noise
4 - Conservation and Open Space	Mandatory	Land Use, Seismic and Public Safety
5 - Seismic and Public Safety	Mandatory	Land Use, Conservation and Open Space
6 - Noise	Mandatory	Land Use and Circulation
7 - Economic Development	Optional	Land Use
8 - Glossary	n/a	All
* Housing	Mandatory	Land Use

* The Housing Element will be prepared under a separate cover.

As shown in Table 1-2, the City has chosen to expand the Land Use Element to address closely related topics including public facilities and community infrastructure. The Conservation and Open Space Elements have been combined into a single chapter because of the overlapping topic areas required to be addressed in each. An optional Economic Development Element has also been incorporated because of the importance of this topic to the community.

CONSISTENCY OF THE GENERAL PLAN

Internal Consistency

California Government Code Section 65300.5 requires that the "General Plan and elementscomprise an integrated, internally consistent, and compatible statement of policies." This means that all goals, policies, standards, and implementation programs outlined in one element of the General Plan must agree with those outlined in all other elements. Otherwise, there will be confusion regarding community policies and standards. In addition, all maps and diagrams within the General Plan must be consistent with the text. The General Plan of the City of Atwater has been prepared in compliance with these internal consistency requirements.

Consistency With Other Planning Processes

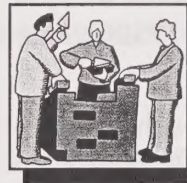
To be an effective guide for future development, the General Plan must provide a framework for local development that is consistent with the policies of appropriate State, regional, and local programs and regulatory agencies. This General Plan takes into consideration the following plans or regulations:

- Surface Mining and Reclamation Act.
- Sphere of Influence as regulated by the Local Agency Formation Commission (LAFCO).
- San Joaquin Valley Air Quality Attainment Plan.

- Merced County Hazardous Waste Management Plan.
- Integrated Solid Waste Management Plan.
- Merced County Regional Transportation Plan.
- Merced County Congestion Management Plan.
- Regional Housing Needs Assessment
- Comprehensive Land Use Plan for Castle Airport.

In addition, the potential impacts of the General Plan must be evaluated in compliance with the California Environmental Quality Act (CEQA). A separately bound Environmental Impact Report (EIR) has been prepared to evaluate and disclose the environmental impacts associated with implementation of the General Plan in compliance with CEQA requirements.

GENERAL PLAN IMPLEMENTATION



The General Plan provides the basic policy foundation for land development. Land use regulations and plans enacted by a local government, including but not limited to, zoning ordinances, subdivision ordinances, design guidelines, specific plans, and redevelopment plans, are the principal means by which the goals and policies of a General Plan are implemented. Therefore, all such regulations and plans must be consistent with the General Plan.

Following adoption of the 2000 General Plan, the City will review all existing land use regulations and plans for consistency with the General Plan and modify those documents as necessary to resolve or eliminate any inconsistencies that are found. Ensuring that existing ordinances and plans are consistent with the General Plan is one method of implementing its policies. Other methods

General Plan Introduction

include development of new ordinances and plans, financing programs, capital improvement decisions, and enforcement actions.

State law also defines how cities should maintain their Plan as a contemporary policy guide. Section 65400 (b)(1) of the California Government Code requires that each planning department report annually to the City Council on "the status of the Plan and progress in its implementation, including its progress in meeting its share of regional housing needs and local efforts to remove governmental constraints to the maintenance, improvement and development of housing."

To implement this requirement, the City Council should review the General Plan on an annual basis to ensure consistency with current Federal, State, and local regulations and policies. The status of the General Plan will be presented to the City Council and at minimum address the following items:

- A list of approved/denied General Plan amendment requests.
- A summary of capital projects that have been constructed in accordance with the Circulation Element or other appropriate component of the Plan.
- Recommendations for resolving any identified inconsistencies with applicable Federal, State, and local regulations or policies.
- A summary of the number of housing units constructed during the year according to each income category and the number of remaining units necessary to meet the City's fair share allocation.
- A list of specific efforts made to remove governmental constraints to the maintenance, improvement or development of housing.
- A summary of implementation programs completed during the prior year.

- A schedule identifying implementation programs to be completed during the upcoming year.

The Housing Element is the only element which has a mandatory schedule for review and updating. This time frame has typically been every five years, although modifications to that schedule and/or extensions have been approved in the past by the Legislature. The City will continue to review and update the Housing Element as necessary in accordance with State law.

Although the General Plan should be designed to provide clear guidance for development in the Planning Area, it is also meant to be a flexible planning tool for the community. Community needs and values, environmental conditions, and Federal and State policies can change over time. The General Plan needs to be able to respond to these changes. State law permits up to four amendments per year of a City's General Plan. It is also anticipated that the City will undertake a comprehensive review of the General Plan approximately every 10 years. This will allow the community to reassess its situation and revise its goals, policies, and programs accordingly.

PUBLIC FACILITIES INFRASTRUCTURE

LAND USE, PUBLIC FACILITIES AND COMMUNITY INFRASTRUCTURE ELEMENT

INTRODUCTION



The Land Use Element establishes the framework of objectives, policies, and implementation programs that will guide the community's physical form and growth. In order to plan appropriately for the community's future population growth and needs, the Land Use Element identifies the distribution of land uses and intensities, population densities, and building intensities for the next 20-year period.

California Government Code Section 65302(a) requires that a land use element be included in a General Plan, and more specifically mandates that the element address the following:

"...the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan..."

In addition to addressing the intensity and distribution of land uses, this element has been expanded beyond the traditional scope of a Land Use Element to incorporate other closely related topics including community design, public facilities, and infrastructure.

PLANNING BOUNDARIES

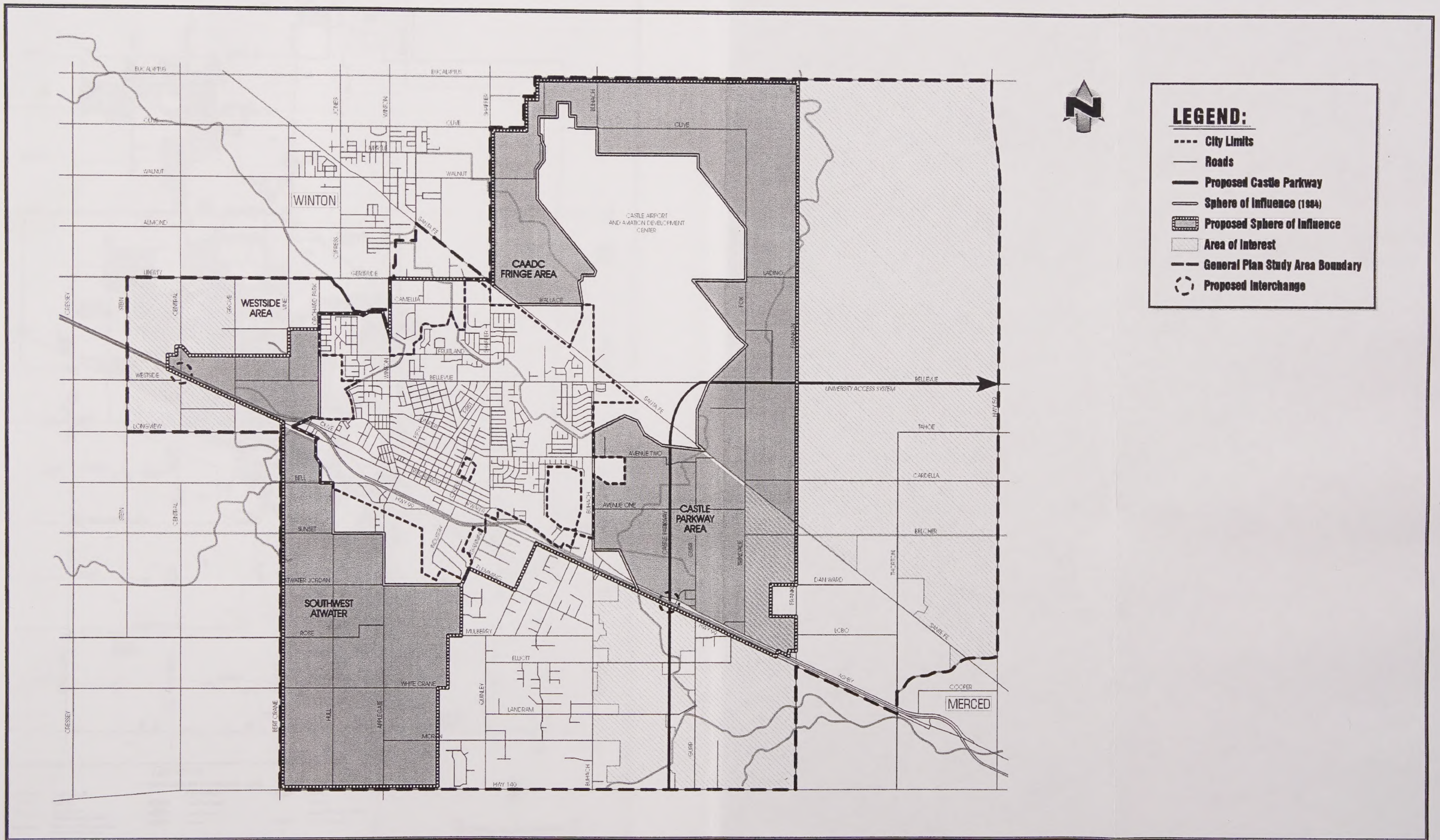
Approximately 5.25 square miles of land are currently within the Atwater City limits. However, in planning for growth and development, the state's *General Plan Guidelines* allow a city to include lands outside its city limits which in the planning agency's judgement "bears relation to its planning" (§65300). Figure 2-1 depicts Atwater's existing City limits, the City's current (1984) Sphere of Influence, the City's Proposed (2000) Sphere of Influence, and Atwater's 44.6 square mile Planning Area.

LAND USE SETTING

Figure 2-2 depicts actual land uses as of 1990 within the central portion of the General Plan Study area. Most of the land located outside of Atwater's existing City limits, and (1984) Sphere of Influence, is devoted to agricultural uses. However, significant urban development is located within the community of Winton, just north of the Planning Area. Considerable residential development has also occurred in the McSwain area, located directly south of the City, and the Franklin-Beachwood area to the southeast.

Within the City itself, the land use pattern is generally defined by the following:

- The Central Business District, located along Broadway and Atwater Boulevard roughly between Winton Way and High Street.
- The commercial strip located along most of the length of Atwater Boulevard.
- The industrial areas located south of Atwater Boulevard and south of Highway 99.
- The commercial strip located along Bellevue Road in the northern portion of the City.



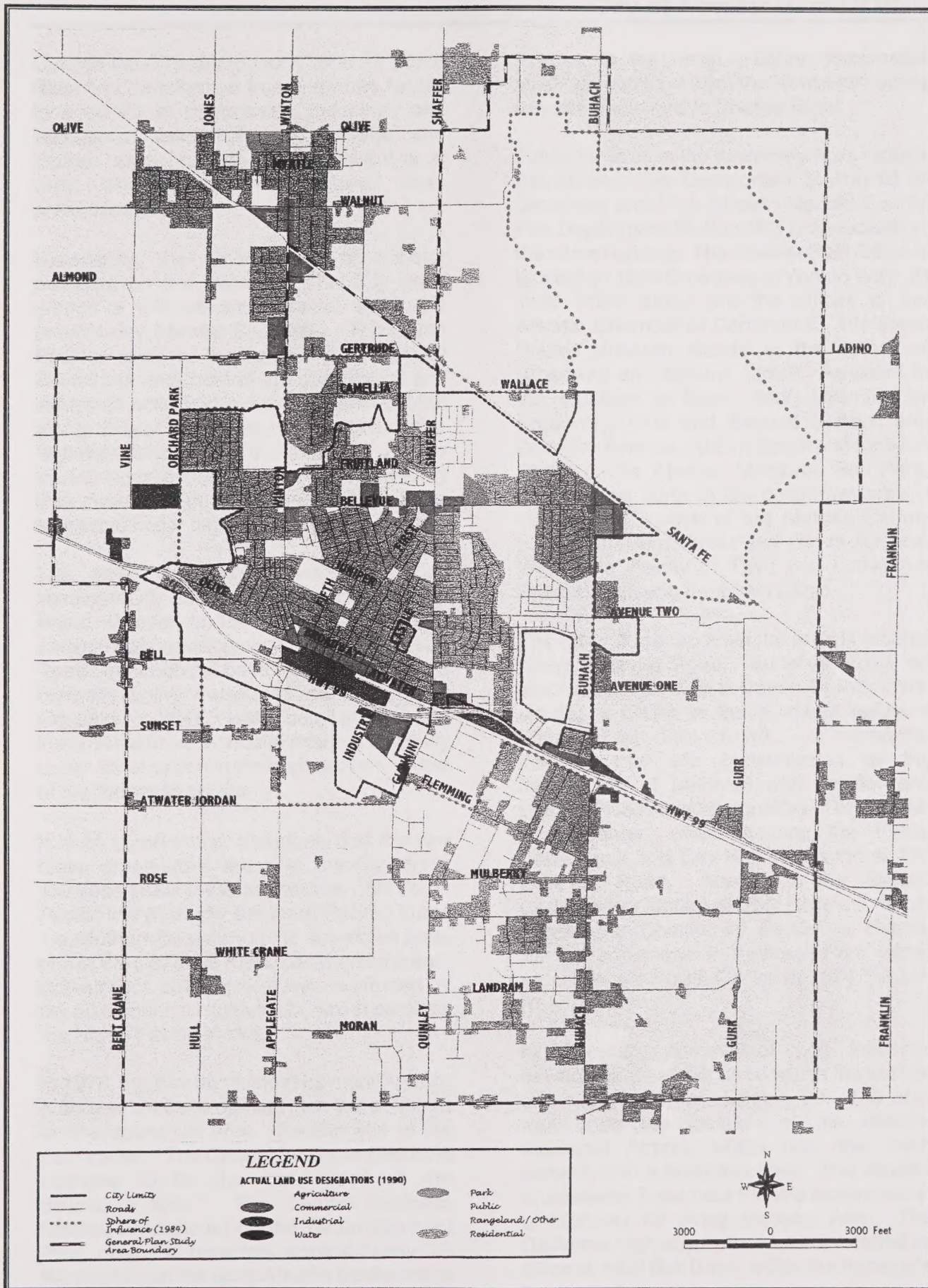


FIGURE 2-2
ACTUAL LAND USES (1990)

Outside the City, the former Castle Air Force Base has transformed from a military facility to a variety of commercial, industrial, and institutional uses. Beyond Atwater and Winton, most residential development is at rural densities, as agricultural uses predominate.

Historically, the development of Atwater centered on the railroad. The City grew around a railroad spur located along the present-day Atwater Boulevard. The Union Pacific railroad tracks parallel Atwater Boulevard, and most of the commercial and industrial activities in the City are located along these two transportation corridors. Highway 99 runs along the boulevard and the tracks. However, unlike other cities, relatively little development has occurred in Atwater along this major highway.

The other significant influence on City development has been Castle Air Force Base. Opened in 1941, the base attracted commercial development along Bellevue Road. Although the base closed in 1995, it is currently being reused as an airport and industrial center, with commercial and institutional uses. A federal prison is currently under construction in the northeastern corner of the former base site.

It is no coincidence, therefore, that the two major commercial areas in the City have developed near these two places. The Union Pacific line (formerly Southern Pacific) forms the southern boundary of the downtown area, one of the City's two major commercial areas. Downtown's development was reinforced by the placement of Highway 99, which parallels the Union Pacific tracks.

In 1976, the Atwater Redevelopment Agency proposed a redevelopment plan that centered on the downtown area. Section 404 of the plan states: "The Central Business District is intended to be the focal point of the downtown area." The Central Business District, as depicted on the Redevelopment Plan map, is bounded approximately by Winton Way to the west, Atwater Boulevard to the south, High Street to the east, and Cedar

Avenue to the north. Other commercial buildings continue from the downtown along Atwater Boulevard to Shaffer Road.

Public facilities in the downtown area include the Atwater Fire Department Station #1 at Broadway and High Street. Merced County Fire Department Station #82 is co-located in the same building. The Atwater Post Office is located on 1599 Broadway at Winton Way. At 1181 Third Street are the offices of the Atwater Chamber of Commerce. The Bloss House Museum stands at the corner of Broadway and Second Street. Adjacent to the museum is Bloss Park, bounded by Broadway, First and Second Streets, and Drakeley Avenue. At Elm Street and Packers Street is the Atwater Memorial Ball Park. Located just north of the downtown area is the Atwater branch of the Merced County Library, at Third Street and Grove Avenue. Within the vicinity of Third and Grove are Ralston Park and the Bloss Clinic.

The other major commercial area is located along Bellevue Road. Bellevue Road, an east-west route, runs to Castle Airport, which creates a break in the roadway before it resumes at Fox Road. Commercial developments are concentrated at the intersection of Bellevue with Shaffer and Buhach Roads and Winton Way. The Atwater Civic Center, which houses the Police Department and City Hall, is located at 750 Bellevue Road. Nearby is the Atwater Community Center, at 760 Bellevue Road. Across the Community Center is Osborn Park. Farther east is Veterans Park, within which lies the Youth Center at 2670 Buhach Road.

More recent commercial and industrial development has occurred within the section of the City south of Highway 99. The area was once the location of the Atwater Municipal Airport, which has now been converted to a business park. The Atwater Wastewater Treatment Plant is located south of Highway 99 along Industry Way. The California Highway Patrol has established an office at 1500 Bell Drive, within the Applegate Business Park.

Land Use, Public Facilities and Community Infrastructure Element

Primary residential areas are set back from the Downtown, occupying most of the area between Downtown and Bellevue Road. Wide tree-lined streets are characteristic of many of the older residential neighborhoods. Another residential area is located southwest of Castle Airport. This area contains housing formerly reserved for base personnel.

HISTORIC GROWTH RATES/POPULATION AND EMPLOYMENT PROJECTIONS

Table 2-1 shows the population growth of the City of Atwater and Merced County from 1970 to the present. Up to 1980, growth in Atwater was well ahead of county growth. Since 1980, the growth rate in the City has lagged behind that for Merced County, with the difference becoming more pronounced in the 1990s. From 1995 to 1998, the population of Atwater had a projected decline, a decline attributable to the closure of Castle Air Force Base and the loss of base personnel.

Table 2-1
Population of Atwater and Merced
County, 1970-1998

Year	Atwater		Merced County	
	Pop.	Aver. Annual Growth Rate (%)	Pop.	Aver. Annual Growth Rate (%)
1970	11,640	---	104,629	---
1975	14,550	5.0	118,200	2.6
1980	17,530	4.1	134,558	2.8
1985	19,500	2.2	154,700	3.0
1990	22,282	2.9	178,403	3.1
1995	23,000	0.6	197,900	2.9
1998	21,922	-1.6	204,400	1.1

The City's growth rate has been greater than that of the state until recently. During the 1970s, California's population grew at an average annual rate of 1.73 percent, less than half of Atwater's growth rate. Growth rates were more comparable in the 1980s and early 1990s, as the City's population

growth more closely resembled state growth patterns. Still, the average annual growth rate for the City in the 1980s was slightly ahead of that for California, which was 2.33 percent. The population growth rate for the state was lower in the 1990s, probably a result of the economic recession that hit California particularly hard. Since 1995, California's population growth rate has rebounded from its low in the mid 1990s as its economy has recovered, but Atwater's population has actually declined.

A population projection, like any forecast, involves uncertainty due to several factors: economic changes, changes in community character, shifts in outside perceptions or desires, and city and county efforts to encourage or discourage growth. Nevertheless, there are some reasons to predict that the current decline in the City's population will be reversed. First, the reuse of Castle Air Force Base could stimulate the local economy and may attract more workers and residents, although the *Environmental Impact Statement for the Disposal and Reuse of Castle Air Force Base* (1994) concluded that population levels would not increase beyond preclosure levels. Second, the opening of the future University of California campus near the City of Merced may have a spillover effect, as students and employees seek housing. Third, the relatively low housing prices in Merced County will become more attractive to prospective homeowners. Finally, the Central Valley as a whole, and especially the San Joaquin Valley, is projected to experience higher than average population growth, as more businesses, workers, and commuters move into the region.

One set of population projections was prepared by the Merced County Association of Governments (MCAG). MCAG projections cover the entire 20-year General Plan period. The projections for Atwater were augmented by growth rates used in the Environmental Impact Report for the University of California Site Selection, to account for the anticipated population increase generated by UC Merced, to be located at Lake Yosemite north

of Merced. Based on MCAG's projections, the City of Atwater was expected to grow from its 1998 Department of Finance (DOF) estimated population of 21,922 to a population of 42,523 in 2020.

While projections from local councils of governments are commonly used in analyses, there are some concerns about the use of the MCAG projections. For instance, the projected 2000 population of Atwater is 26,115. This is an increase of 4,193 from the 1998 DOF estimated population of Atwater, or a 19 percent increase of population in two years. Given recent population trends in Atwater, this is considered an unrealistic growth rate. Since MCAG uses a higher population base than is probably realistic, its projections likely overestimate the future growth of Atwater's population during the time period of this General Plan.

As part of the 2000 General Plan Update process, a market study was prepared which attempted to develop more realistic growth projections for Atwater. The projections developed as part of that effort are summarized in Table 2-2.

**Table 2-2
Market Study
Population Projection**

Year	Pop. Projection
2000	23,452
2005	26,435
2010	30,363
2015	33,948
2020	38,781

COMMUNITY DESIGN ISSUES AND TRENDS

Quality Development

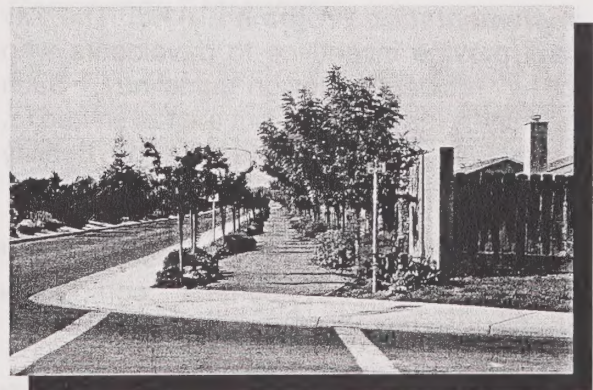


The appearance of a community can directly affect the attitudes of its citizens and how it is viewed by visitors and potential investors. One of the valued characteristics of older residential neighborhoods within Atwater are the tree-lined streets. As Atwater continues to grow,

it is important that similar features be incorporated into new development. Throughout the City, enhanced landscape and design standards are encouraged to



improve the appearance and quality of both newly developed and redeveloped areas.





GOAL LU-1. Create attractive residential streetscapes and neighborhoods.

Policy LU-1.1. Develop design guidelines for new residential neighborhoods that have a human scale and are oriented to the pedestrian.



Policy LU-1.2. Support and guide the rehabilitation of older residential structures that enhance the character of a neighborhood.

Policy LU-1.3. Design streets with a priority on neighborhood structure and pedestrian scale.

Implementation Program LU-1.a. The City shall consider the establishment of a low-interest loan program for the rehabilitation of older housing units, using Community Development Block Grant (CDBG) funds or other funding sources.

Implementation Program LU-1.b. The City shall develop design guidelines for residential neighborhoods and streets that emphasize pedestrian use. These guidelines shall illustrate desired development patterns, architectural forms and landscaping.

Implementation Program LU-1.c. The City shall provide incentives to developers who follow residential design guidelines. Such incentives may include, but are not limited to, expedited project review and density bonuses.

GOAL LU-2. Ensure that the appearance of non-residential development contributes positively to the community's image.

Policy LU-2.1. Develop design guidelines for commercial, industrial, and business park development that present an attractive public view and are integrated with the surrounding area.

Policy LU-2.2. Encourage design of large-scale commercial, industrial, and business park projects that are oriented to a human scale.

Implementation Program LU-2.a. The City shall prepare design guidelines for commercial, industrial, and business park development that illustrate desired development patterns, architectural forms, and landscaping. For large-scale projects, the guidelines shall encourage the incorporation of features that bring the development to a more human scale, such as sensitive massing, building articulation, and the incorporation of plazas and courtyards.

Implementation Program LU-2.b. The City shall provide incentives to developers who follow non-residential design guidelines. Such incentives may include, but are not limited to, expedited project review.

Revitalization and Enhancement of the Downtown

Downtown Atwater, like many other downtowns across the country, continues to struggle to maintain its economic viability and emphasis as the core of the community.



Implementation of a variety of strategies will be necessary to bring new life and focus to the downtown. These include land use planning strategies, redevelopment activities, and aggressive marketing.

As part of this effort, it needs to be acknowledged that Downtown will not compete with regional-scale commercial development. Rather, Downtown should focus on its role as the cultural, entertainment, government, office, financial and social center of the community.

Strategies designed to achieve this goal include: Applying land use classifications and policies that will result in a compact mixed-use development pattern; investing in physical improvements to enhance the pedestrian orientation and distinctive appearance of downtown streets and places; improving access to downtown buildings; broadening the allowable range of uses within downtown districts; and creating physical spaces to accommodate social activity.

GOAL LU-3. Preserve and enhance the unique character of Downtown Atwater.

Policy LU-3.1. Develop design guidelines for Downtown that maintain and enhance its pedestrian scale and orientation and ensure a consistent architectural theme.

Policy LU-3.2. Continue efforts to improve and rehabilitate buildings, housing, and infrastructure in Downtown.

Policy LU-3.3. Accommodate a variety of uses in Downtown Atwater that operate beyond standard business hours to increase activity within the City core.

Policy LU-3.4. Encourage development of mixed use projects within the Downtown area. Developments should be designed with active ground floor commercial or service uses with residential or office units above.

Policy LU-3.5. Explore opportunities to create public gathering spaces in Downtown Atwater.

Policy LU-3.6. Encourage activities within the Downtown that draw people to the area including festivals, farmer's markets, and street fairs.

Policy LU-3.7. Encourage outdoor uses such as restaurant seating, flower sales, and similar activities on private property and, where appropriate, on public property.

Implementation Program LU-3.a. The City shall prepare a Specific Plan for the Downtown area that contains design standards for buildings, streets, and landscaping.

Implementation Program LU-3.b. The City, through its Redevelopment Agency, shall prepare a five-year Implementation Plan that outlines projects to improve Downtown, consistent with the proposed Specific Plan, and use redevelopment financing to implement the projects.

Implementation Program LU-3.c. Create a facade improvement program for Downtown Atwater that focuses on providing low interest loans to property owners who wish to make desirable improvements to existing structures. Funding for these loans may be obtained from a variety sources including the Atwater RDA and the state Community Block Grant Program (CDBG).

Implementation Program LU-3.d. Amend the City's Zoning Ordinance and any other City Codes as necessary to accommodate mixed use development projects within Downtown and sidewalk dining activities.

Community Entrances

Most visitors to the region view Atwater from the Highway 99 corridor. Few landscape improvements currently exist along the corridor or at other key entrance points into and through the City. Efforts to improve the visual appearance of these gateways and corridors is essential to an overall strategy designed to elevate investment in the community and enhance Atwater's image within the region.

GOAL LU-4. Enhance the appearance of primary entrances into and through Atwater.



Policy LU-4.1. Utilize landscaping, signage, and gateway treatments to enhance the aesthetic appearance of primary streets into and through the community including, but not limited to:

- Applegate and SR 99
- Atwater Boulevard
- New Westside Entrance
- Bellevue Road
- Buhach Road
- Castle Parkway
- Shaffer Drive
- Santa Fe Drive
- Winton Way

Implementation Program LU-4.a. The City, through its Redevelopment Agency, shall incorporate aesthetic improvement of the areas within the Atwater Redevelopment area surrounding the SR 99 interchanges as a high priority project within the RDA's five-year Implementation Plan.

Implementation Program LU-4.b. The City shall design and pursue the installation of monument type signage and landscape treatments at key entrances into Atwater, as identified in Policy LU-4.1.

Implementation Program LU-4.c. The City shall prepare a streetscape plan for primary streets through the community. The plan should at minimum address:

- Priorities for undergrounding any existing overhead utilities.

- Landscape treatments (street tree planting/spacing, planters, and signage).

GOAL LU-5. Enhance views of Atwater from SR 99.

Policy LU-5.1. Develop SR 99 as a landscaped corridor through the Atwater community

Implementation Program LU-5.a. The City, through its Redevelopment Agency, shall identify landscaping of the SR 99 corridor within the Redevelopment Area as a high priority project in the RDA's five-year Implementation Plan.

Implementation Program LU-5.b. The City shall encourage private participation in the installation of screen type landscaping on private properties adjacent to SR 99.

Implementation Program LU-5.c. The City shall pursue funding that may be available from Caltrans and the Merced County Association of Governments (MCAG) to complete desired landscape and irrigation improvements along SR 99.

SPECIAL LAND USE CONSIDERATIONS

Mineral Resources of Statewide or Regional Significance

Public Resources Code Section 2762(a) requires that local governments establish mineral resource management policies within their general plans if any mineral resources of statewide or regional significance are designated within their jurisdiction. No such areas have been designated within the City of Atwater Planning area.

Flood Prone Areas

According to the State General Plan Guidelines, a Land Use Element should consider the location of flood-prone areas. Portions of the Planning Area subject to a 100-year flood event are identified on Flood Insurance Rate Maps (FIRM), issued by the Federal Emergency Management Agency

(FEMA). As noted on the most recent FIRM (1995), the 100-year flood area within the City of Atwater's Planning area is confined mainly to the east and southeastern portions. A more detailed discussion of potential flood hazards and a figure depicting areas subject to 100-year flooding are presented within the Seismic and Public Safety Element of this General Plan.

Solid Waste Disposal Sites



State General Plan Guidelines also require that future solid waste disposal sites be designated in the Land Use Element. There are no solid waste disposal sites designated within the Atwater Planning area. Solid waste generated within the City is collected by a private contractor, Browning Ferris Industries, and transported directly to the Merced County Landfill located off State Highway 59, approximately one and one-half miles north of Old Lake Road. The County of Merced is the contracting agency for landfill operations and maintenance. Estimates of remaining capacity for the existing facility indicate that the landfill could reach capacity as early as 2001. The County of Merced is currently pursuing a facility expansion of approximately 200 acres which could extend the life of the landfill for 20 to 30 years. Solid waste issues are discussed in greater detail in the Open Space/Conservation Element of this General Plan under the topic of Source Reduction and Recycling.

LAND USE DIAGRAM

The Atwater General Plan Land Use Diagram is presented on Figure 2-3. This Diagram identifies the location, distribution, and extent of all land uses within the Planning Area.

GENERAL PLAN LAND USE CLASSIFICATIONS

The following section identifies all land use classifications depicted on the Land Use Diagram and describes typical land uses accommodated within each category.

Very Low Density Residential (VLDR) - This designation accommodates the needs of residents who desire large parcels and the feeling of open space integrated with a suburban lifestyle. The permitted density range is 0 to 3.0 units per acre. The minimum parcel size permitted is 11,000 square feet, however, most parcels are greater in size. One single family residence is permitted per legally created lot. Typical land uses include: single family residences and residential accessory uses, churches, schools, parks, community care facilities, and necessary public utility and safety facilities. Secondary dwelling units may be permitted consistent with state and local regulations.



Low Density Residential (LDR) - This category provides for residential development at densities that are typical for existing single family residential subdivisions within the City. The permitted density range is 3.1 to 7.0 units per acre. Parcel sizes range from 5,000 to 11,000 square feet in area. All properties must be served by public sewer and water. Typical land uses include: single family residences and residential accessory uses, churches, schools, parks, community care facilities, and necessary public utility and safety facilities. Secondary dwelling units may be permitted consistent with state and local regulations.

Medium Density Residential (MDR) - This classification is designed to accommodate a variety of residential products including, but not limited to, single-family detached and attached units, zero lot line developments, duplexes, and multi-family structures. The permitted density range is 7.1 to 15.0 units per acre. Associated land uses include: residential accessory uses, churches, schools, parks, community care facilities, and necessary public utility and safety facilities.



High Density Residential (HDR) - This designation is intended to provide for multi-family units such as apartments, and/or

condominiums in structures up to four stories in height. The permitted density range is 15.1 to 35 units per acre. Projects should include common open space and on-site recreational amenities such as tot lots, pools, or playground equipment. On-site day care facilities are also encouraged.

Downtown Residential Mixed Use (DMU) -

This designation provides for a full range of uses in Downtown Atwater including retail stores, eating and drinking establishments, commercial recreation, entertainment and cultural facilities, hospitals, hotels and motels, educational and social services, and government offices. Residential uses are appropriate up to 25 dwelling units per acre. Development and redevelopment projects shall be designed to have a strong pedestrian orientation with active uses occupying the ground floor. A mix of uses within a building--such as, active ground floor uses, and upper story office and residential uses-- is appropriate. The maximum floor area ratio permitted is 2.0.



Residential Transition (RT) - This designation is intended to provide a transition between commercial development and adjacent residential neighborhoods. It has also been applied in locations where a mix of commercial and residential land uses have been approved. The purpose of the classification is to encourage the development of apartments and certain compatible commercial uses, or the expansion and improvement of existing structures. Residential densities up to 21 units per acre are considered compatible. Commercial land uses which may be potentially compatible include, but are not limited to: medical, professional and business offices, parking lots and structures, personal service establishments, retail stores, restaurants, motels, rooming and boarding homes, social halls, lodges, fraternal organizations and clubs, licensed nursing or convalescent homes, public and quasi-public uses, minor manufacturing when at least 75 percent of the product is sold on the

premises. The maximum floor area ratio permitted is 0.35.

Commercial Transition (CT) - This designation is also intended to provide a transition between commercial development and adjacent residential neighborhoods. Businesses which do not generate high volumes of traffic or noise, such as, professional office uses, low impact public uses, galleries, art and photography studios, church facilities, and other similar uses are generally considered compatible within this classification. The maximum floor area ratio permitted is 0.30.



Commercial (COM) - This designation is intended to accommodate a wide range of commercial activities ranging from regional commercial facilities to general and neighborhood commercial uses. Establishments may range from retail to service and entertainment uses.

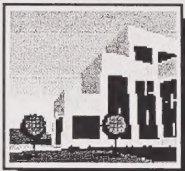
Development may occur as a single structure, group of commercial uses (small- to medium-scale center) or regional mall type facility. Developments consisting of 75,000 square feet or more should incorporate landscaped public gathering areas with pedestrian oriented features such as benches in central locations. Common driveways and parking areas or other features should be utilized whenever possible to avoid impacts on the capacity of adjacent roadways.

Commercial centers should present a unifying architectural theme, include an internal traffic circulation system and accommodations for transit services, as well as, a unifying landscape theme. The maximum floor area ratio permitted is 0.35.



Manufacturing (MFG) - This designation provides for a wide range of industrial activities which involve warehousing, manufacturing, processing, fabrication, and

other similar operations. Some uses may be noisy, and prone to emit dust, vibration, odor, and/or glare, although these impacts must be mitigated at the property line to avoid negative impacts on adjacent uses. Businesses generally involve the frequent use of large trucks for pick-up and delivery of parts and products. Typical uses often have high utility demands and require special consideration for construction to accommodate heavy truck traffic. Uses can be developed independently or as part of a subdivision. The maximum floor area ratio permitted for most uses is 0.50. However a maximum floor area ratio of 0.60 is allowed for low employment industries, such as, warehousing, wholesaling, or distribution.



Business Park (BP) - In contrast to the Manufacturing category, the Business Park designation provides for large buildings or a cluster of buildings usually developed in a "campus" style. Business uses may include manufacturing operations within completely enclosed buildings, associated offices, trade schools, and supporting child care and retail activities. Outside storage is limited and must be effectively screened with solid fencing and/or landscaping. The operations are quiet and require infrequent use of large trucks for pickup or delivery of parts or products.

Buildings are visually pleasing with extensive landscaping around buildings and parking areas. Projects with multiple buildings provide a strong pedestrian orientation between the structures. A typical project has vehicular access to a major street with on-site parking and a project identification sign. The maximum floor area ratio permitted is 0.40.

Castle Airport Aviation and Development Center (CAADC) - The City of Atwater has adopted land uses identified within the Castle Air Force Base Reuse Plan as the Land Use Plan for the Castle Airport Aviation and Development Center. These designations

are incorporated into the General Plan by reference.

Urban Reserve (UR) - This designation has been applied to areas within the City of Atwater's proposed (2000) sphere of influence to indicate locations which may be suitable for urban development in the future. Current Merced County agricultural designations and permitted uses will apply in these areas until such time as the City's primary and secondary growth areas approach buildout.

Urban Reserve / Business Park (UR/BP) - This designation has been applied to areas surrounding the CAADC site that are intended to remain at current Merced County agricultural designations until development demands warrant future transition to Business Park uses.

Agriculture/Area of Interest (AG) - This designation has been applied both inside and outside of the City's proposed (2000) Sphere of Influence to indicate those locations where current agricultural and open space land uses are to be maintained in areas surrounding the City. Application of the term "Area of Interest" is intended to lay the groundwork for long-term agreements with the City and County of Merced relative to the maintenance of distinct boundaries and buffers between the City of Atwater, City of Merced, Community of Winton, McSwain, and Franklin-Beachwood.



Institutional (I) - This designation is intended for public and quasi-public facilities, including, but not limited to, government services and facilities, fire/police stations, wastewater treatment facilities, electrical substations, domestic water treatment and storage, and other similar uses. New facilities may be appropriate in any land use category based on need and environmental review. The Land Use Diagram will not be amended for new public facilities on sites that occupy less than 2 acres. The maximum floor area ratio permitted is 0.40.

School (SCH) - This designation has been applied to areas with existing and proposed primary and secondary public school facilities. Of particular interest is the proposed High School site located on the south side of Avenue Two just east of Buhach Road. Although this designation has been applied based upon existing information, new facilities may be appropriate in any land use category based on need and environmental review. The maximum floor area ratio permitted is 0.40.

Park (PK) - This designation has been applied to indicate the location of existing and planned public park facilities ranging from neighborhood to community parks. Additional parkland which may be dedicated and developed in conjunction with individual subdivisions need not receive a formal designation in order to be established. The maximum floor area ratio permitted is 0.10.



Recreation (REC) - This designation is intended to accommodate commercial recreational facilities, including but not limited to, golf courses, driving ranges, tennis and racquet clubs, health clubs and spas, equestrian facilities, swim clubs, roller skating arenas, archery facilities, and other similar uses. The maximum floor area ratio permitted is 0.10.

Path (P) - This designation is indicated in locations considered desirable for development of a comprehensive system of linear parks and pathways. These facilities shall be required as appropriate within new residential developments. Utilization of the existing canal system shall serve as the backbone of this open space network.

Specific Plan Areas 1, 2 and 3 (SP 1, SP 2, and SP 3) - This overlay has been applied within the southwest portion of the City's 2000 proposed Sphere of Influence to indicate those locations where Specific Plans will be prepared to guide future growth and development. Lands within these areas will continue to be under the jurisdiction of the

County of Merced until the Specific Plans are adopted and future annexation is completed. Incorporation of these areas within the City's proposed Sphere of Influence will allow the City to review and comment on any development applications that are considered by Merced County in the interim, and provide opportunities for the establishment of uniform development standards and coordinated facilities planning.

LAND USE INTENSITY STANDARDS

In addition to characterizing land use designations according to types of allowable uses, the General Plan must specify standards for population density and building intensity for the various land use designations adopted by the City.

This information not only provides insight as to how many residents, jobs, and housing units will be accommodated by the Plan, but is also useful in planning for necessary infrastructure, traffic, schools, and civic improvements. The concepts of making these determinations are referred to as "holding capacity" and "buildout."

Holding capacity is normally referred to as the number of people that could theoretically be accommodated in the Planning Area if all land were to develop to the maximum potential allowed by the land use designations of the Plan. Buildout is the *point in time* at which land in the Planning Area is being used to the maximum extent allowed by the Plan. Buildout of a planning area to its maximum holding capacity will rarely occur given such factors as limitations on capacity of resources, infrastructure, public services necessary to support new development, and the choices by individual property owners about the appropriate extent of development

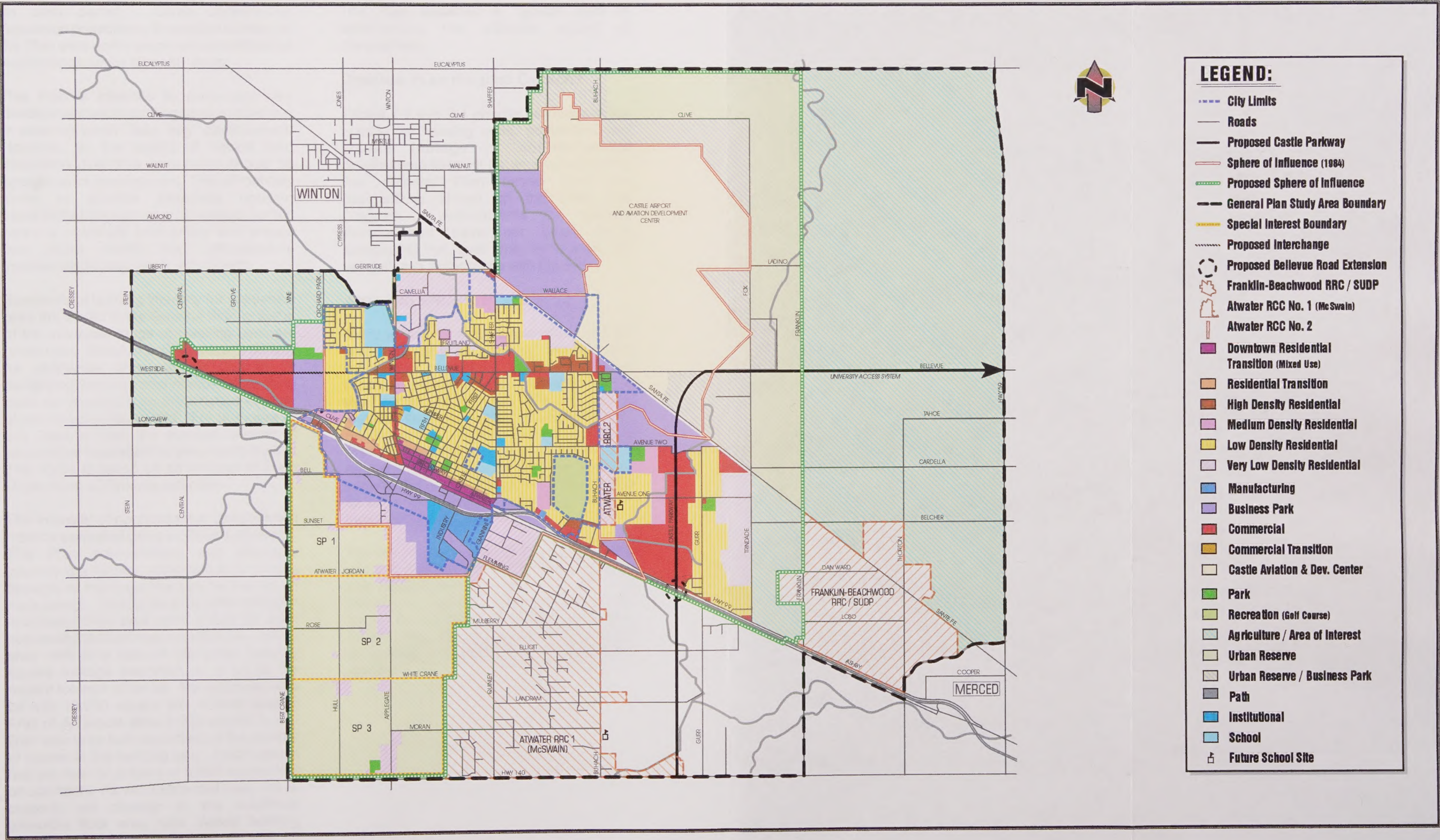


FIGURE 2-3
LAND USE DIAGRAM

on each parcel. Given conservative population projections, theoretical buildout of the Plan area under proposed classifications would not occur for 40 or 50 years.

This Plan is intended to encourage new development within existing service areas first in order to avoid “leap frog” development. However, as the supply of vacant land diminishes over time, new areas should be opened up for development. This will not only serve to provide adequate housing opportunities for a growing population, but will serve to moderate land prices and ensure that public facility and infrastructure improvements keep pace with growth.

Standards of building intensity for residential uses are stated in the General Plan in terms of the allowable range of dwelling units per gross acre. Standards of population density for residential uses can be derived by multiplying the maximum number of dwelling units per gross acre by the average number of persons per household. For purposes of this General Plan, the average number of persons per household is assumed to be 3.0. This figure is based on an average of State Department of Finance estimates.

The intensity of nonresidential development must be estimated using a different approach. This Plan acknowledges that allowable intensity is a function of the size in (in square footage) of buildings that can be placed on each parcel. This is done by establishing a maximum “floor area ratio” (FAR) for each non-residential land use classification. A floor area ratio is a ratio of the gross building square footage permitted on a lot to the square footage of the lot. For example, on a lot with 10,000 square feet of land area, a FAR of .50 would allow 5,000 square feet of floor area to be built regardless of the number of stories in the building (e.g., 2,500 square feet per floor on 2 floors or 5,000 square feet on one floor). As with residential uses, not all property will develop to the maximum allowable floor area ratio. Actual building intensities could be between 15 and 20 percent less when the land area dedicated to infrastructure is considered.

The Plan assumes a “typical” ratio in determining the ultimate extent of development.

GENERAL PLAN HOLDING CAPACITY

Tables 2-3 and 2-4 provide estimates of the number of housing units, population, and square footage of non-residential development that will be accommodated by this General Plan based upon the designations shown on the Land Use Diagram. Adjustments for existing development have not been made recognizing that, over time, many areas will redevelop in accordance with this Plan.

AREA AND SPECIFIC PLANS

Many jurisdictions designate some of their lands for special planning policies and procedures, beyond the conventional zoning process. Reasons for doing this vary. One is that certain lands have unique physical features that may require special attention. Another is the need or desire to develop an area in an integrated and comprehensive manner. Still another is the hope to entice commercial or industrial activities by offering an area where such activities can locate to their advantage.

The mechanisms employed for this special planning include specific plans and planned unit developments (PUDs). The City has prepared or adopted special plans for two areas - the Applegate Business Park and the CAADC site. The City is also in the process of initiating a Specific Plan for Downtown Atwater.

**Table 2-3
General Plan Holding Capacity
Residential Land Uses**

Land Use Designations	Assumed Typical Residential Density	Acres Designated (Gross)	Dwelling Units	Population ¹
Residential (dwelling unit per acre [du/a])				
Very Low Density Residential (du/a)	1.50 du/a	2,562.85	3,844.28	11,533
Low Density Residential	5.00 du/a	2,441.25	12,206.25	36,618
Medium Density Residential	11.00 du/ac	180.70	1,987.70	5,963
High Density Residential	25.00 du/a	124.30	3,107.50	9,323
Franklin-Beachwood (Estimate for Res.)	mixed	712.00 ²	245.00	735
TOTAL	N/A	6,021.11	21,390.73	64,172

¹ Assumes an average of 3.0 persons per dwelling unit.

² Of the 712.00 acres within the Franklin-Beachwood area, approximately 205.00 acres are specifically designated for various residential uses. Estimates given for dwelling units and population within Franklin-Beachwood are based on residentially designated acreage, not the total acreage of the community.

³ Separate residential acreage and buildout information for the Community McSwain was not available at the time of the City's 2000 General Plan update. Therefore, the entire McSwain area has been combined into the Very Low Density Residential designation on the City's Land Use Diagram for purposes of estimating the number of dwelling units and population anticipated in that area.

NOTE: Development of mixed use projects within the Downtown (Mixed Use) and Residential Transition designations at an assumed rate 15 and 11 du/ac, respectively, for 30% of the total acreage available; as well as, potential residential development under existing Merced County agricultural designations at an assumed average of one dwelling unit per 40 acres, would increase the potential build-out population by approximately 2,217 persons.

**Table 2-4
General Plan Holding Capacity
Non-Residential Land Uses**

Land Use Designations	Assumed Typical Comm./Ind. Floor Area Ratio	Acres Designated (Gross)	Assumed Comm./Ind. Square Footage	Estimated Employees
Commercial				
Residential Transition	0.30	50.50	659,934.00	659
Commercial Transition	0.25	5.35	58,261.50	58
Downtown Mixed Use	1.50	71.05	4,642,407.00	3,094
Commercial	0.30	857.32	11,203,457.76	7,469
Industrial				
Manufacturing	0.40	152.50	2,657,160.00	2,657
Business Park	0.30	1,540.83	20,135,566.40	20,136
CAADC	Mixed	2,548.00	4,550,896.15	7,500
Other				
Institutional	0.35	91.00	1,387,386.00	555
School	0.35	270.50	4,124,043.00	2,749
Park	0.05	119.40	260,053.20	26
Recreation	0.05	123.00	267,894.00	53
Urban Reserve	--	4,429.30	--	--
Urban Reserve / Business Park	--	1,302.80	--	--
Agricultural/Area of Interest	--	9,103.90	--	--
Other Land in Planning Area ¹	--	1,860.65	--	--
TOTAL	n/a	22,526.10	49,947,059.01	44,956

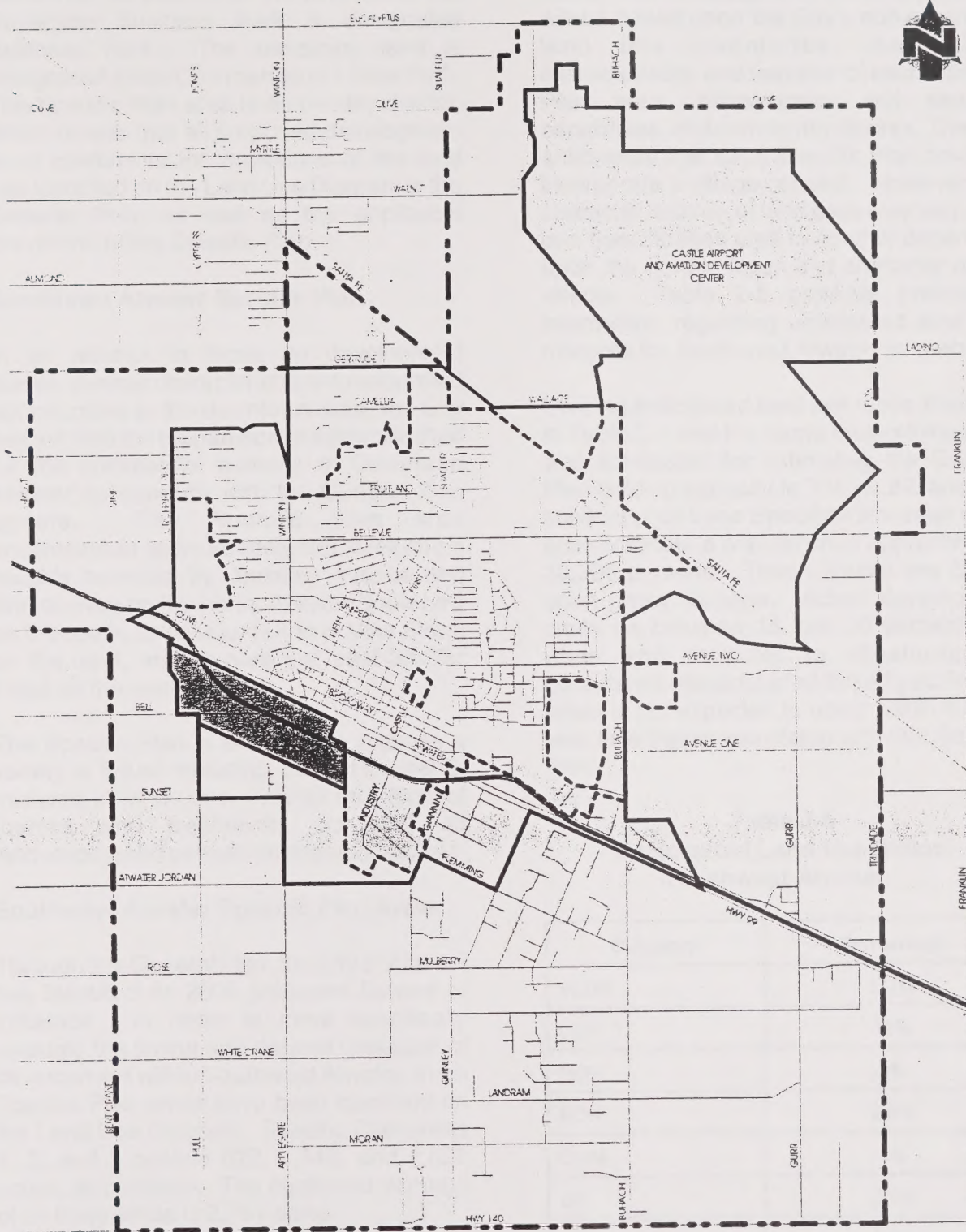
¹ This category includes all other land within the City's Planning Area that has not been designated or recognized as an existing Rural Residential Community (RRC).

Southwest Area Plan (Applegate Business Park)

The Applegate Business Park is located on the southwest edge of the City (Figure 2-4). It is adjacent to Highway 99, with most of its approximately 204 acres located south of the highway. The park is comprised of 30 parcels of land, with 23 separate property owners. Parcels range in size from less than one-quarter acre to 50 acres. Multiple ownership of the business park property makes it difficult to determine the specific use and the timing of parcel development. Thus, in order to establish a development theme, the Atwater Redevelopment Agency embarked on the preparation of a specific plan. A draft specific plan was completed in 1991 and a final plan was subsequently adopted.

The Applegate Business Park Specific Plan contains nine elements:

- 1) *Specific Plan Goals.* The Specific Plan adopted eight goals:
 - Development that enhances the City's quality of life.
 - Development that produces public revenues for the City.
 - Development that generates jobs.
 - Development that takes advantage of freeway location and exposure.
 - Improved freeway accessibility.
 - Establishment of a prestigious gateway for the City.
 - Buffering of commercial/light industrial uses from future residential uses.
 - Identification of suitable treatment for the canals and drains.
- 2) *Improve freeway accessibility.* Foremost among proposed improvements in the park area is the upgrading of the Applegate Road/Highway 99 interchange.
- 3) *Conversion of the Atwater Municipal Airport to M-1 Industrial use.* While not in the business park, the airport area was viewed as having an impact on the development and use of the park. This conversion has been accomplished.
- 4) *Property Development.* A joint marketing effort for the parcels in the business park is proposed, with the Atwater Redevelopment Agency taking the lead.
- 5) *Specific Plan by City resolution.* Instead of an ordinance, it is proposed that the City adopt the Specific Plan by resolution. This would provide greater flexibility, as the plan can be more readily revised as needed.
- 6) *Land use.* The Specific Plan establishes a new land use designation - "Business Park." It provides for both commercial and light industrial uses, but it does not specify a particular use for a particular parcel. This designation provides developers with flexibility and provides the City with a cohesive physical development.
- 7) *Economic viability.* Not all of the property in the business park is available for development due to the value placed by the existing property owners. The Specific Plan attempts to establish a sense of marketability of the property on the part of the existing property owners.
- 8) *Policies for specific parcels.* The Specific Plan includes a list of development considerations for specific parcels in the business park. The guidelines are not to be considered inflexible development standards, but development proposals should include them or show why there is a need to deviate.
- 9) *Community design and beautification.* Design standards are included to accomplish a cohesive development. The focal point of the park is a tower and plaza, which will assist in establishing a prestigious City gateway and will set a standard of quality.



LEGEND:

- Project Study Limits
- Atwater City Limits

 Sphere of Influence (1984)
Business Park

 Castle Airport & Aviation
Development Center

Land Use, Public Facilities and Community Infrastructure Element

More than 90 percent of the land within the Applegate Business Park is designated Business Park. The remaining land is designated either Commercial or Linear Park. The Specific Plan area is an overlay district, which means that all proposed development must conform to the provisions of the land use identified on the Land Use Diagram in the General Plan, as well as the applicable provisions of the Specific Plan.

Downtown Atwater Specific Plan

In an attempt to focus on development issues, desired character and redevelopment opportunities in the downtown area, the City has initiated the preparation of a Specific Plan for the commercial portions of Downtown Atwater concurrently with the General Plan update. The Specific Plan area encompasses approximately 109 acres and is roughly bounded by Drakeley Avenue and Winton Way on the north, Atwater Boulevard on the south, an area just short of Vine Street on the west, and an area just past Shaffer Road on the east.

The Specific Plan is expected to address a variety of issues including, but not limited to, mixtures of land uses, desired architectural themes and treatments, as well as landscaping and pedestrian oriented features.

Southwest Atwater Specific Plan Areas

Through this General Plan, the City of Atwater has identified its 2000 proposed Sphere of Influence. In order to more specifically evaluate the timing and desired character of development within Southwest Atwater, three Specific Plan areas have been identified on the Land Use Diagram. Specific Plan areas 1, 2, and 3 contain 622, 1,140, and 1,029 acres, respectively. The combined acreage of all three areas is 2,791 acres.

Much of the land within these areas that is not already devoted to urban land uses has been designated as Urban Reserve on the Land Use Diagram. More specific land use designations will be applied in conjunction with the preparation of individual specific

plans. Actual designations that are applied will be based upon the City's non-urbanized land use inventories, the unique characteristics and features of each Specific Plan area, infrastructure and services capabilities, and community desires. The City anticipates that each Specific Plan area will incorporate a village concept. However, the character and mix of land uses may vary from one Specific Plan area to another depending upon the central focus and character of the village. Table 2-5 provides preliminary information regarding anticipated land use mixtures for Southwest Atwater as a whole.

Utilizing anticipated land use ratios identified in Table 2-5 and the same methodology that was conducted for estimating the General Plan holding capacity in Tables 2-3 and 2-4, buildout of all three Specific Plan areas could accommodate a population of approximately 20,298 persons. These figures are based upon gross acreage. Actual development could be between 15 and 20 percent less when land dedicated to infrastructure is considered. Buildout of all three Specific Plan areas is not expected to occur within the 20-year time frame associated with this General Plan.

Table 2-5
Anticipated Land Use Ratios
Southwest Atwater

Category	Percentage
VLDR	50%
LDR	10%
MDR	5%
HDR	2.5%
COM	5%
BP	2.5%
INST	2.5%
SCHOOL	5%
OS	15%
PARK	2.5%

¹ Estimates are based upon gross acreage.

GOAL LU-6. Utilize specific plans to guide development in areas with unique land use, infrastructure, or resource issues.

Policy LU-6.1. Prepare Specific Plans for areas whose unique land use, infrastructure, or resource issues require more detailed treatment than that expressed by General Plan policies and implementation programs.

Implementation Program LU-6.a. The City shall pursue the completion of Specific Plans for Downtown Atwater, Specific Plan areas 1, 2, and 3 in Southwest Atwater, and the Castle Parkway area.

CAADC Reuse Plan



In 1991, the Department of Defense announced the closure of Castle Air Force Base. The base was formally decommissioned and closed in September 1995. Upon closure, it was renamed the Castle Airport and Aviation Development Center (CAADC).

In August 1995, the Castle Joint Powers Authority (JPA) was formed to oversee and facilitate economic reuse of the former military installation. The JPA prepared a Preliminary Reuse Plan, with Air Force participation, that was used by the Department of Defense in issuing a Record of Decision for disposal of base property. In 1996, the JPA prepared the Castle Air Force Base Reuse Plan, a long-term plan to address local planning issues necessary for the successful reestablishment of commercial, industrial, and institutional land uses at the former base. As a prelude to applying for annexation of the CAADC site, the Atwater City Council on December 1997 formally adopted the Reuse Plan and associated Land Use Plan Map as the City's land use plan for all territory within the CAADC boundary.

The Reuse Plan quantifies existing resources at the CAADC site, and it contains a preliminary market assessment for reuse opportunities. Most importantly, it provides

for a variety of land uses and indicates the locations where these uses would be allowed. Nine land use designations are applied to the roughly 2,566 acres the Reuse Plan covers. Table 2-6 below lists the land use designations for the CAADC site and the number of acres designated.

The JPA currently manages base closure and reuse activities. Should annexation be approved, the City would make all land use decisions and provide municipal services. The JPA would continue to provide maintenance for certain facilities and common areas after annexation.

The following goals and policies have been adopted by the City of Atwater in anticipation of eventual annexation of the CAADC.

Table 2-6
CAADC Reuse Plan
Land Uses

Land Use	Acreage ¹
Airport and Airport Related	1,323.0
Correctional Facility	653.0
Business Park	269.0
Medical	14.3
Educational Commercial Recreation	101.4
Visitor Commercial	35.5
Commercial	105.8
Commercial Recreation	40.6
Open Space	23.4
Total	2,566.0

¹ Acreage information for the CAADC does not include off-base housing and is based upon a reconciliation between the Reuse Plan estimates and the 1996 Annexation Feasibility Study prepared for the City. Actual acreage of the entire site is somewhat less based on preparation of a recent legal description.

Land Use, Public Facilities and Community Infrastructure Element

GOAL LU-7. Ensure that long term economic and social benefits, such as employment, are maximized through reuse of the former Castle Air Force Base.

Policy LU-7.1. The City of Atwater, in concert with Merced County and the Merced County LAFCO, may continue to pursue annexation of the CAADC, if considered in the best interests of the City.

Policy LU-7.2. Accomplish full economic reuse of the Castle property.

Policy LU-7.3. Promote the Joint Powers Authority's reuse efforts in coordination with City economic development efforts.

Policy LU-7.4. Coordinate economic development functions at Castle with the JPA, the City and County of Merced, and various other economic development entities which are promoting revenue and employment-generating businesses within the region.

Policy LU-7.5. Appropriately locate land uses to minimize conflicts and maximize reuse opportunities.

Policy LU-7.6. Utilize the Castle AFB Reuse Plan and Land Use Plan Map, adopted by the JPA, or subsequently adopted document as the City of Atwater's Land Use Plan and General Plan land use designations for properties within the Castle Airport and Aviation Development Center boundary.

Policy LU-7.7. During review of individual projects, ensure consistency with the Reuse Plan, map and policies, or any subsequent documents developed jointly and approved by the City of Atwater, City of Merced, JPA, and County of Merced.

Policy LU-7.8. Development applications submitted to the City shall be referred to the County of Merced for comment.

Policy LU-7.9. In order that reuse activities will not compromise long-term toxic clean-up

programs at Castle, all applications received by the City involving uses with the potential to create groundwater contamination or other environmental hazards shall be referred to the Air Force Base Conversion Agency for comment.

Policy LU-7.10. Availability of sewer, water, and drainage facilities shall be demonstrated for all reuse activities.

Policy LU-7.11. A long-term fiscal plan for maintenance and construction of capital facilities shall be prepared.

Policy LU-7.12. Ensure development/reuse activities contribute their fair share toward capital improvements necessary to offset project impacts.

Policy LU-7.13. Utilize assessment districts, major thoroughfare zones of benefit and/or other financing tools, based on local traffic studies to ensure reuse activities contribute their fair share for new and upgraded transportation facilities.

Policy LU-7.14. Prior to sunset of the Air Force caretaker agreement, a tax/revenue sharing agreement or other appropriate mechanism, shall be developed and implemented to fund public safety services at Castle.

Policy LU-7.15. Application procedures shall be streamlined to minimize project approval timelines within the Reuse Plan area.

Policy LU-7.16. Development applications and plot plans will be accepted for review by the City after the JPA has indicated that it will consider leases for such reuses.

Policy LU-7.17. City staff will work cooperatively with JPA staff to achieve application processing timelines coordinated with the JPA lease issuance process.

Policy LU-7.18. Utilize the Castle Reuse Plan, "Plan Implementation," section as a general guide for permit application review

and processing procedures, in combination with appropriate zoning provisions of the City Code.

Policy LU-7.19. Modify permit application review, processing, and approval procedures as necessary to:

- Improve coordination between the City, JPA, and County of Merced.
- Simplify the application process.
- Reduce approval timelines, particularly for minor projects or activities.

Policy LU-7.20. Should the City, County, and JPA deem appropriate, the City of Atwater shall support the creation of an Airport District for all or portions of Parcel A.

Policy LU-7.21. Any applications for reuse on lands within Castle that have been retained by the federal government shall be accompanied by a statement from the JPA Board and/or Air Force Base Conversion Agency that they are considering leasing to the applicant.

Policy LU-7.22. All reuse activities shall be in conformance with the California Environmental Quality Act.

Policy LU-7.23. Environmental review (CEQA compliance) shall assume full military operations as they were in effect at the time of the base closure announcement in September 1990, as the baseline environmental setting when determining impact thresholds for reuse activities, consistent with State law, the Air Force base closure EIS, and the JPA's Reuse Plan EIR. Projects which exceed this threshold will be subject to further review under CEQA prior to approval by the City.

Policy LU-7.24. Preserve the utility and full civilian/general aviation use of Castle Airport.

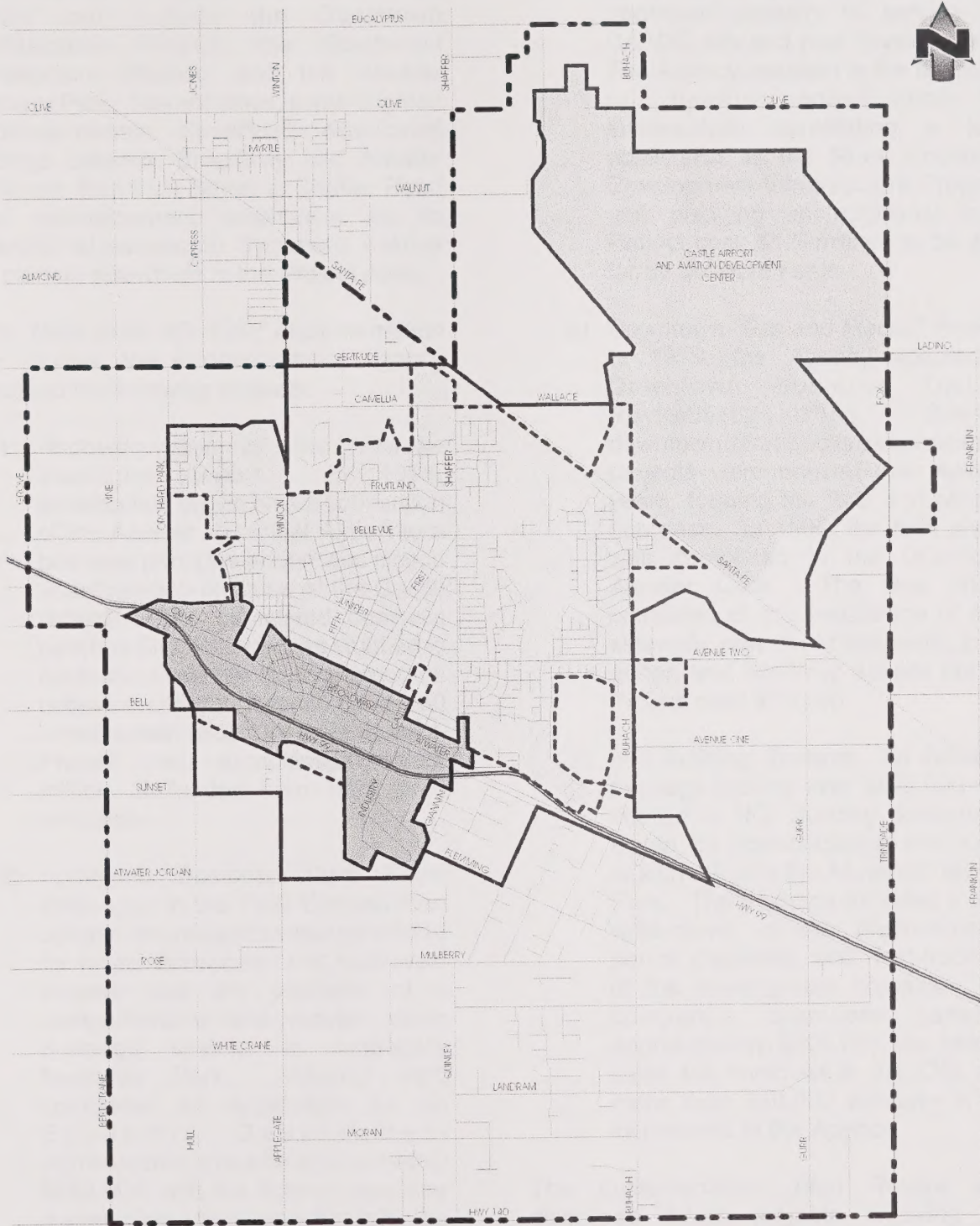
Policy LU-7.25. Development standards shall be flexible in consideration of historic mixed-use development patterns as a military base.

REDEVELOPMENT AREA AND PLAN

In 1976, the Atwater Redevelopment Agency was created. The Agency is a tool to assist in the elimination of blighting conditions within the Project Area, and it seeks to ensure that the City's economic base will grow and remain healthy through the provision of new public improvements, commercial and industrial development, and affordable housing. The Project Area, approximately 806 acres in size, consists of the downtown commercial core, the Applegate Business Park, the Atwater Business Park, two public parks, and several residential neighborhoods (Figure 2-5).

The goals of the Atwater Redevelopment Agency, pertinent to economic development, are as follows:

- Improve the existing infrastructure supporting the Project Area, particularly streets, sewerage, water, storm drainage, curb, gutter and sidewalk, railroad crossings, parks and playgrounds, and parking. Remove existing impediments to the economic development of the community.
- Eliminate or mitigate other existing blighting conditions, including incompatible land uses, obsolete or substandard structures, inadequate public facilities and small, irregular landlocked parcels.
- Ensure and maintain an attractive, viable downtown Business District which provides economic incentives that create new job opportunities.
- Encourage and assist industrial and commercial development to ensure adequate job opportunities, a stable tax base in the community, and new investments in the Project Area.



LEGEND:

- Project Study Limits
- ... Atwater City Limits

 Sphere of Influence (1984)
 Redevelopment Area

 Castle Airport & Aviation Development Center

Redevelopment projects that have been carried out include the Downtown Revitalization Project, the Southwest Infrastructure Project, and the Atwater Business Park. Nevertheless, some blighted conditions remain. Specifically, dilapidated buildings between Broadway and Atwater Boulevard from First Street to Shaffer Road need redevelopment assistance, as do underutilized parcels on Sycamore Avenue and parcels elsewhere in the Project Area.

In its 1994-1999 AB 1290 Implementation Plan Review, the Redevelopment Agency discussed the following projects:

- 1) *Redevelopment of the Atwater Municipal Airport.* In 1995, construction began on the conversion of the Atwater Municipal Airport to a business park (the airport was closed in anticipation of reuse of the Castle airfield). The completed business park has City infrastructure stubbed to each site available to accommodate potential users. Approximately 30 acres remain vacant for development. Project cost: approximately \$1.5 million, all funded from 1991 bond proceeds.
- 2) *Applegate Business Park Storm Drainage.* In the 1992 General Plan update, one mitigation measure listed for future development of southwest Atwater was the provision of a comprehensive and master storm drainage system to Applegate Business Park. Agency staff completed an application for an Economic Development Administration grant for approximately \$558,000, with the Agency providing the remaining necessary funds for the estimated \$909,100 project.
- 3) *Atwater Canning Company.* The Atwater Canning Company approached the Agency with a proposal to divert its process water from the City's wastewater treatment plant to an off-site land application process. The intent was to keep the

company competitive while freeing treatment capacity to service the CAADC site and new developments. The Agency assisted in the financing of pipeline construction by successfully completing a loan application to the Rural Economic Development Infrastructure Program and pledging an additional loan. Project cost: \$1.5 million, to be paid for by tax increments.

- 4) *Downtown "Bits and Pieces" Project.* In 1979, the Agency adopted a Downtown Business District Revitalization Plan. Several downtown infrastructure improvement projects were phased over several years, forming the "bits and pieces" approach. In 1995, the final phase was completed in the Downtown Atwater Core. The final phase consisted of the installation of new sidewalk, new street tree wells, curb, gutter, and handicap access ramps. Project cost: \$70,000.
- 5) *NCI Building Systems.* An incentive package totaling over \$468,000 was offered to NCI Building Systems to locate its manufacturing and sales design office to the Atwater Business Park. The package included a land write-down, off-site improvements, permit discounts, and "fast-tracking" of the development process. The company's operations generate approximately \$200,000 per year in sales tax revenues to the City, and more than \$40,000 annually in tax increments to the Agency.

The *Implementation Plan Review* also discusses future projects involving the Redevelopment Agency. Improvements of the aesthetics and value of the Atwater Boulevard corridor will continue to have a high priority. Another project is the provision of infrastructure improvements and housing rehabilitation or new construction on Broadway and Atwater Boulevard east of First Street. The Agency will seek to stimulate business interest in the Applegate Business

Park by providing storm drainage improvements, improving the Applegate Overpass and Highway 99 interchange, and actively marketing the business park. For the Atwater Business Park, the Agency shall be the lead and set forth improvement plans for its development, provide all basic infrastructure needs for light industrial activities, and employ active marketing strategies.

GOAL LU-8. Support the efforts of the Atwater Redevelopment Agency to upgrade infrastructure, provide affordable housing opportunities, and remove blight within the Redevelopment Area.

Policy LU-8.1. The City will continue exercise its redevelopment powers to implement the policies of the General Plan, including the acquisition of land for reuse, the funding of public improvement projects such as streets and parks, and provision of financial assistance to developers and homeowners.

Implementation Program LU-8.a. The City will identify large properties or property groups with high development potential and, where feasible, participate in their development through Redevelopment Agency powers such as land assembly, planning and financing, and selection of a master developer.

Implementation Program LU-8.b. The City through the next five-year Implementation Plan of the Redevelopment Agency, shall identify blighted areas and develop measures to eliminate blight. Measures shall include a financing mechanism.

COMPREHENSIVE ANNEXATION PLAN - DESIRED SPHERE EXPANSION

The Atwater Sphere of Influence currently encompasses 11 square miles. The Sphere of Influence includes all the land presently within the Atwater City limits, and those areas expected to ultimately be served by the City. The most significant land area within the Sphere of Influence that is currently outside of

the City limits is the CAADC site to the northeast. In 1984, the Merced County Local Agency Formation Commission (LAFCO) approved the inclusion of the then-existing Castle Air Force Base site in Atwater's Sphere of Influence. The current Sphere of Influence also includes lands north of the City limits bounded by Winton Way, Gertrude Avenue, Santa Fe Drive, and Wallace Road. Lands adjacent to the southern and northwestern City limits are included as well.

The City's primary target annexation area has historically been the CAADC site. The employment and economic multipliers generated by operation of the former military base were a significant portion of the region's, and particularly the City of Atwater's, economic base. Closure of that facility and its successful conversion to civilian use are now issues of special concern to the City. However, much of the site's infrastructure would have to be improved to City standards. Future development could pay for some of the costs, but more immediate improvements would have to be funded by other means.

Upon closure of Castle Air Force Base in 1995, the City began evaluating the feasibility of annexing the site. In December 1997, the City amended its General Plan to incorporate the Reuse Plan for Castle Air Force Base as its land use plan for the site, thus ensuring legally required consistency between the plans. On May 1998, the City submitted an application to the Merced County LAFCO for annexation of the CAADC site. In response, LAFCO sent a letter to the City dated June 5, 1998 requesting further information and documents. Updated application materials were submitted to LAFCO in July 1998. At that time the City of Atwater and County of Merced resumed the process of negotiating a tax sharing agreement that would go into effect upon annexation of the CAADC site. It is unknown when this aspect of the annexation process will be resolved. If a mutually acceptable agreement is not developed, the City may elect to withdraw its application for annexation.

As part of the City of Atwater's 2000 General Plan Update, the community has evaluated

the vacant land available within its existing City limits, current (1984) Sphere of Influence, and identified the boundaries of its proposed (2000) Sphere of Influence.

Table 2-7 summarizes vacant land estimates for the various categories within Atwater's existing City limits. This information was compiled from resources including the Merced County Association of Governments, the Merced County Assessor's Data Base, and a vacant land map maintained by the City. This information has also been depicted in Figure 2-6.

Table 2-7
Vacant Land Inventory for Existing
Atwater City Limits

Land Use	Vacant Acres	Historic Absorption Rate/Year	Projected Absorption Rate/Year ²	Estimated Supply
VLDR	52.00	44.00	66.0	<1 year
LDR	293.0	21.00	32.0	9 years
MDR	19.00	3.70	5.50	3 years
HDR	27.00	0.40	0.60	45 years
COM ¹	79.00	11.00	22.00	4 years
BP	173.5	4.50	9.00	19 years
MFG	49.00	4.50	9.00	5 years

¹ Includes all commercial categories.

² Projected absorption rates have been estimated considering historic growth trends and anticipated development demands resulting from local and regional influences (i.e., Major circulation improvements, UC Merced Development, Prison Development and successful Reuse of the CAADC).

A similar table (Table 2-8) has been prepared which presents vacant land estimates for various land use categories within the City's 1984 Sphere of Influence.

Table 2-8

Vacant Land Inventory for Existing Atwater Sphere of Influence

Land Use	Vacant Acres	Historic Absorption Rate/Year	Projected Absorption Rate/Year ²	Estimated Supply
VLDR	312.0	44.0	66.0	5 years
LDR	11.0	21.0	32.0	< 1 year
MDR	0.0	3.70	5.50	< 1 year
HDR	0.0	0.40	0.60	< 1 year
COM ¹	59.0	11.0	22.00	3 years
BP	211.0	4.50	9.00	23 years
MFG	10.0	4.50	9.00	1 year

¹ Includes all commercial categories.

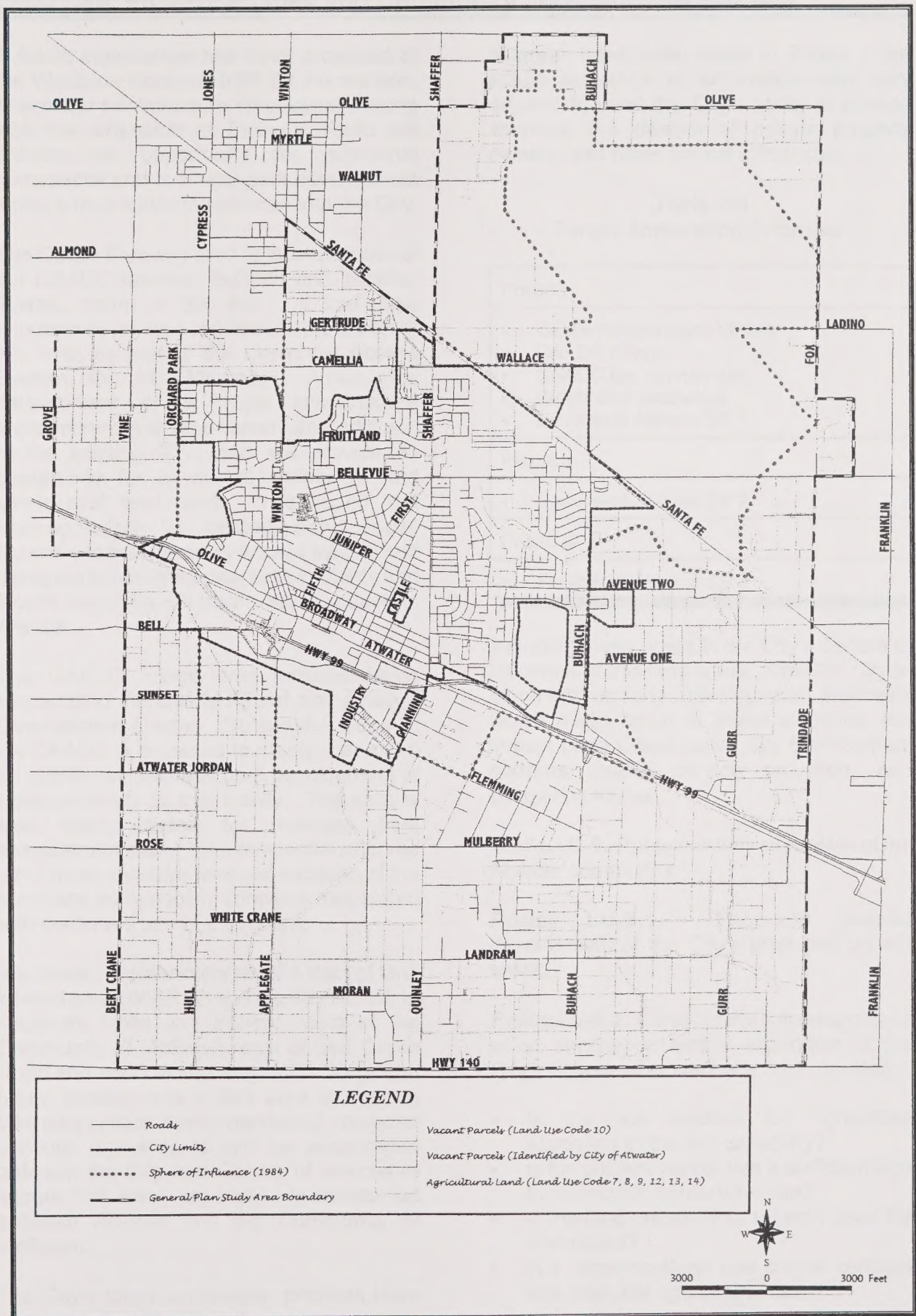
² Projected absorption rates have been estimated considering historic growth trends and anticipated development demands resulting from local and regional influences (i.e., Major circulation improvements, UC Merced Development, Prison Development and successful Reuse of the CAADC).

The amount of non-urbanized land for some categories represents less than a one year supply.

With this General Plan, the City is planning to expand its Sphere of Influence by approximately 8,636.65 acres, or 13.5 square miles. The entire area is expected to accommodate more than 20 years of development, however, some commercial and business park areas may need to be annexed in advance of development to ensure that needed infrastructure can be adequately planned for.

For general reference and infrastructure planning purposes, lands within the proposed Sphere of Influence have been broken down into four specific growth areas. As indicated in Figure 2-1, these areas include: Westside, Castle Parkway, CAADC Fringe, and Southwest Atwater.

The Westside area extends from the City's existing western corporate limits and 1984 Sphere of Influence boundary and continues west just past the intersection of Central Avenue and State Route 99.



Land Use, Public Facilities and Community Infrastructure Element

A future interchange has been proposed at the Westside Boulevard/SR 99 intersection. This major infrastructure improvement along with the extension of Bellevue Road will provide an opportunity for additional commercial and business park development along a new northern entrance into the City.

The Castle Parkway area is located south of the CAADC between Buhach and Trinidad Roads, north of SR 99. A four lane expressway is proposed through the center of this area as part of the University Access System for UC Merced. Again, the development of a major infrastructure improvement in an area immediately adjacent to the existing City limits will provide an opportunity for a mix of residential and commercial land uses. It is hoped that housing which is located within close proximity to the University Access system and designed to accommodate both students and faculty members will attract these groups to Atwater.

The CAADC Fringe area includes lands surrounding the Castle Airport and Aviation Development Center. Successful reuse of the CAADC is expected to create a demand for additional business park development in close proximity to that facility. The area is also ideally suited for business park development rather than residential or some other more sensitive land use because of the noise and compatibility concerns associated with continued use of the Airport.

Southwest Atwater consists of a tract of land located south of SR 99 and the City's existing corporate limits and Sphere, west of the Community of McSwain, east of Bert Crane Road and north of Highway 140. Long-term future development in this area is likely to take on a predominantly residential character although agreements will be encouraged between the City and County of Merced to ensure that some separation is maintained between Atwater and the Community of McSwain.

The City's target annexation priorities have been separated into three phases, as summarized in Table 2-9. Although a number

of areas have been listed in Phase I, the actual sequence of annexation may vary depending upon the City's ability to provide services, the desires of private property owners, and other market influences.

Table 2-9
Target Annexation Priorities

Phase I
• Castle Parkway and Vicinity • CAADC Fringe • CAADC (as appropriate) • Westside Interchange • Southwest Atwater SP 1
Phase II
• Southwest Atwater SP 2
Phase III
• Southwest Atwater SP 3

Including these areas in the City's Sphere of Influence at this time would allow the City to comment on any development proposals which might occur at these locations and impact current and future City development patterns, public service provision, and circulation routes.

GOAL LU-9. Pursue orderly expansion of the Atwater community.

Policy LU-9.1. Facilitate phased development of the City's proposed growth areas.

Policy LU-9.2. Consider the following criteria when annexation and/or expansion of the City's Sphere of Influence is contemplated:

- Is the soil suitable for agriculture according to the soil capability?
- Is the present parcel size a sufficient size for economic agricultural use?
- Is the land presently or recently used for agriculture?
- Will nonagricultural use create conflicts with adjacent agricultural uses?
- Have provisions been made to provide adequate levels of public services to

satisfy the demands generated by the proposed development?

- Will an individual waste disposal system contaminate the surface or ground water table?
- Will intensive use present hazards to public health, welfare, or safety?
- Will urban use impact significant open space and/or conservation values?
- Is there an adequate supply of available vacant land within the existing urban boundary to accommodate reasonably anticipated or historic growth needs over the next 10 years?
- Is the proposal consistent with the goals and policies of the City's General Plan or Specific Plan?

Implementation Program LU-9.a. Consider the information provided in Tables 2-7 and 2-8 when evaluating the current Sphere of Influence for adequacy in accommodating projected growth in 5, 10, and 20 years, and submit an application for a revised Sphere of Influence to LAFCO. The "Proposed Sphere of Influence" depicted in Figure 2-1 and on the Land Use Diagram shall be used as a guide for the City's future application.

GOAL LU-10. Maintain a compact urban form.

Policy LU-10.1. Apply an Urban Reserve land use designation to areas within the Planning area that are outside of the City's anticipated 10-year growth boundaries and have not already developed with urban or rural residential land uses.

Policy LU-10.2. Annex and redesignate areas from Urban Reserve to other appropriate land uses when necessary based upon development demands.

Policy LU-10.3. Prior to annexation, lands designated as Urban Reserve may be developed consistent with current Merced County agricultural land use designations.

Implementation Program LU-10.a. Monitor the City's inventory of vacant land for residential and non-residential land uses.

When the inventory of vacant lands for a particular category reaches 75 percent buildout, the City shall pursue any necessary Sphere of Influence modification/annexation and redesignate areas identified as Urban Reserve to maintain at least an additional 10-year supply of vacant land based upon projected demands.

GOAL LU-11. Identify appropriate locations and timing for future Business Park development.

Policy LU-11.1. Utilize the Urban Reserve/Business Park designation to identify areas considered appropriate for future Business Park development on the Land Use Diagram.

Policy LU-11.2. Annex and redesignate areas from Urban Reserve/Business Park to Business Park when appropriate based upon development demands.

Policy LU-11.3. Prior to annexation, lands designated as Urban Reserve/Business Park may be developed consistent with current Merced County agricultural land use designations.

Implementation Program LU-11.a. Monitor the City's inventory of vacant land designated for Business Park uses surrounding the CAADC site. When these areas have reached 75 percent buildout, the City shall pursue annexation and redesignate areas noted as Urban Reserve/Business Park to Business Park. The amount of land annexed and redesignated should provide at least a 10-year supply of vacant Business Park land based upon projected demands.

GOAL LU-12. Ensure the utilization of consistent City and County development standards within proposed growth areas.

Policy LU-12.1. Encourage the County of Merced to review development proposals within Atwater's proposed growth areas for

consistency with the development standards of the City.

Implementation Program LU-12.a. The City shall seek to establish a formal agreement with the County to ensure that consistent development standards are implemented within the City's proposed growth areas. The agreement shall also include a review and approval process for land use designation changes for the unincorporated lands within the City's Sphere of Influence.

AREAS OF INTEREST OUTSIDE THE EXISTING SPHERE OF INFLUENCE

In addition to areas within the City's proposed Sphere of Influence, the General Plan Land Use Diagram also identifies lands within the Planning Area that are of particular interest to the City. These lands are within the unincorporated portion of Merced County and have been designated as agricultural and/or open space lands in most instances. Long-term maintenance of these areas in agriculture is important to the City from the standpoint of protecting agricultural land outside of anticipated growth areas. Maintenance of agricultural and open space land uses in these areas also protects individual community identities by providing buffers or visual separation between Atwater and the City of Merced, as well as the communities of Winton, Franklin-Beachwood, and McSwain.

It is hoped that identifying these "Areas of Interest" will project the City of Atwater's preferences in terms of land use and lay the groundwork for formal agreements between Atwater and the City and County of Merced.

GOAL LU-13. Maintain the agricultural and open space character of lands within Atwater's "Areas of Interest."

Policy LU-13.1. Encourage Merced County to continue to apply land use designations within Atwater's Areas of Interest that will ensure the maintenance of the existing agricultural and open space character of those lands.

Implementation Program LU-13.a. Pursue the execution of a formal agreement with Merced County to ensure the long-term maintenance of the agricultural and open space character of lands within Atwater's Areas of Interest.

GOAL LU-14. Preserve Atwater's community identity by maintaining buffers between Atwater and the communities of Merced and Winton.

Policy LU-14.1. Designate land uses in the Planning Area that do not encourage urbanization of the land areas between Atwater and Merced, and Atwater and Winton.

Policy LU-14.2. Cooperate with the City of Merced and Merced County to explore the creation of a "greenbelt" that maintains a significant portion of the land area between Atwater and Merced, and Atwater and Winton, in open space or agricultural uses.

Implementation Program LU-14.a. Work with the City of Merced and Merced County, to conduct a feasibility study for the creation of greenbelts between Merced and Atwater, and Atwater and Winton. This study shall include a review of other greenbelt programs such as the Dixon/Vacaville Greenbelt in Solano County. If the study finds greenbelts to be feasible, the City shall actively assist in establishing and finding funding for a greenbelt program.

GOAL LU-15. Consider existing Plans for the Atwater Rural Residential Community No. 1 (McSwain), Franklin-Beachwood RRC/Specific Urban Development Plan (SUDP), and the Winton SUDP when conducting the City's planning efforts.

Policy LU-15.1. Support implementation of Merced County's existing Community Plans for the Atwater Rural Residential Community No. 1 (McSwain), the Franklin-Beachwood RRC/SUDP, and the Winton SUDP.

Policy LU-15.2. Discourage the expansion of existing RRC and SUDP boundaries within the Atwater Planning area.

Implementation Program LU-15.a. Work closely with the County of Merced if modifications to existing Community Plans for the Atwater RRC No. 1 (McSwain), the Franklin-Beachwood RRC/SUDP, and Winton SUDP is proposed in the future to ensure that impacts to the City of Atwater are considered.

Implementation Program LU-15.b. Pursue the establishment of an agreement with Merced County which assures that the existing boundaries of the Atwater RRC No. 1 (McSwain), the Franklin-Beachwood RRC/SUDP, and Winton SUDP will not be expanded within the Atwater Planning area.

IMPLEMENTATION OF LAND USE DIAGRAM

One of the most familiar methods of implementing General Plan land use policy and designations is through the Zoning Ordinance. Although separate from the General Plan, it is essential that the zoning districts utilized to implement General Plan land use designations are consistent with the intent of each designation.

The following table identifies each Atwater land use designation in the left column. Zoning districts considered compatible with each corresponding designation are shown in the right column. Because of the specific nature of zoning regulations, more than one zoning district may be compatible with a single land use designation.

Very Low Density Residential	RE, PD
Low Density Residential	R1 (10), R1(8), R1(6), R1(5), PD
Medium Density Residential	R1(4), R2, R1(3), R3(2.5), PD
High Density Residential	R3(2), R3(1.5), R3(1), PD
Residential Transition	RT
Commercial Transition	RT
Downtown Mixed Use	To Be Developed
Commercial	CO, CN, CC, CT, CG
Manufacturing	M1, M2
Business Park	BP Overlay
CAADC	Mixed, BP Overlay
Institutional	All Districts w/ UP
School	All Districts w/ UP
Park	OS
Recreation	OS
Urban Reserve	Merced Co. Ag and Open Space Zones
Urban Reserve/Business Park	Merced Co. Ag and Open Space Zones
Agricultural/Area of Interest	Merced Co. Ag and Open Space Zones

Land Use Administration

Because of the scale, it may be difficult to determine the precise location of boundaries between General Plan land use designations. In order to streamline minor interpretations of the Land Use Diagram and reduce the need for General Plan amendments in such circumstances, the City of Atwater has established the following policies for land use administration procedures.

GOAL LU-16. Ensure proper and efficient administration of the General Plan Land Use Diagram.

Policy LU-16.1. The City of Atwater Planning Department shall interpret land use

Table 2-10
Land Use and Zoning Compatibility
Chart

Land Use Designation	Zoning District(s)
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Land Use, Public Facilities and Community Infrastructure Element

designation boundaries and their application to individual parcels. Such actions will not constitute a General Plan Amendment.

Policy LU-16.2. In the event that a disagreement should arise between the Planning Department's land use designation finding and the property owner's opinion, the Planning Commission shall review the matter and make a final determination.

Policy LU-16.3. All requests to amend any portion of the General Plan shall be subject to the environmental review, public notice, hearing requirements, and consistency provisions of State law.

PUBLIC SERVICES, FACILITIES AND INFRASTRUCTURE

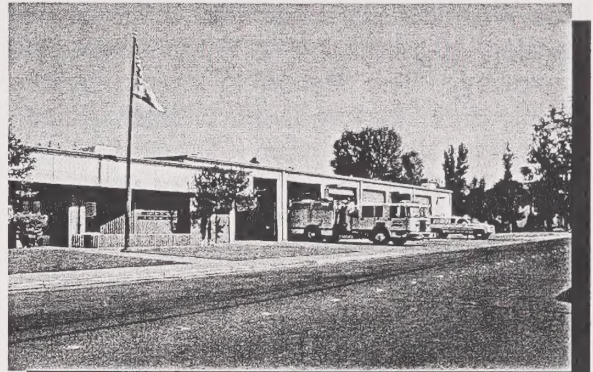
Because of the close relationship between growth and the demands for public services, facilities and infrastructure, the City of Atwater has chosen consolidate the discussion of these items into one comprehensive element. The remainder of this document will focus on essential services, facilities and infrastructure necessary to support the City's future growth, with the exception of transportation. Transportation related facilities and issues are addressed in detail within the Circulation Element.

FIRE PROTECTION

Fire protection services in the City are provided by the Atwater Fire Department. The Fire Department also provides fire protection service to the CAADC site under a contract with the JPA. Two fire stations are used by the Department. Station #1 is located on Broadway, while Station #2 is located on the flightline at the CAADC site. Public safety impact fees are currently being collected for the construction of a new fire station in the northern part of the City. The Fire Department has 17 full-time firefighters and one administrative employee. It also maintains a volunteer company of approximately 25 individuals (Dennis Sparks,



pers. comm.). Target response time for fire protection services is five minutes or less. This standard is anticipated to be maintained and gradually improved as funding for the new fire station and equipment become available. The Fire Department currently has an ISO rating of 5 (Sparks, pers. comm.).



The ISO rating is a measure of fire protection service, with ratings from 1 to 10, 1 being the best.

Fire flows for the City are approximately 1,000 gallons per minute. All fire hydrants in the City, with few exceptions, are capable of delivering this flow. The Fire Chief stated that the City generally has a very good water supply and distribution system (Sparks, pers. comm.).

The 1992 Atwater General Plan anticipated that a maximum of two more fire stations would be sufficient to serve the community at buildout, and it identified five alternative sites. The City's 2000 Planning Area also encompasses a large territory, however, the planned growth patterns for the City are fairly compact, and buildout population will be substantially less. As a result, the need for additional fire stations is not expected to change in order to provide adequate levels of service based upon the current Plan.

As part of the Annexation Feasibility Study for the CAADC, the Atwater Fire Department estimated that an additional 15 firefighters would be required to provide adequate service to the CAADC. Also, while existing equipment on the site would be useable, the Department stated that it would eventually have to be replaced. New equipment would

include a new engine, a heavy rescue vehicle, a command vehicle, and a support vehicle.

Fire protection services in the unincorporated areas are provided by the Merced County Fire Department. The County Fire Department has two stations in the vicinity of the Planning Area. Station 82 is located in downtown Atwater, at the corner of High Street and Broadway. The station is shared by the County and City Fire Departments. Station 88 is located in Winton. There is also a California Division of Forestry and Fire Protection station located on Winton Way above Santa Fe Drive.

In 1996, the Merced County Fire Department performed an assessment of current fire protection needs in the Merced area, and it projected future needs. One option that was selected as part of the preferred alternative for providing future service is the relocation of Station 82 to Applegate Road south of Highway 99. Much of Station 82's primary response area overlaps with the City of Atwater, which already has its own Fire Department. Relocation would increase the amount of County responsibility area within the station's primary response area. It would also provide better coverage to the rapidly growing McSwain-South Atwater area.

The City of Atwater's 2000 General Plan identifies a number of areas that will eventually be developed with industrial, business park and commercial uses. These changes may have an affect on the County's ability to provide service to those areas through the existing Mutual Aid Agreements that are in place. The Merced County Fire Department has indicated that it is in the process of developing plans for a fire station within the Franklin-Beachwood area, but may re-examine this location to eliminate duplication of service and maximize the level of service provided to more intensive growth areas.

GOAL LU-17. Ensure adequate fire protection for residents and businesses in the community.

Policy LU-17.1. Maintain the existing target response time of five minutes or less for emergency fire calls through adequate staffing, proper distribution of fire stations and equipment, and the use of automatic aid agreements.

Policy LU-17.2. Require all new development to contribute funding toward necessary fire facilities and equipment.

Implementation Program LU-17.a. Utilize the following factors to determine the location and type of firefighting equipment that is needed:

- The variety of structures in the area.
- The available water supply.
- The availability of outside aid.
- The amount of area to be protected.
- The kind of fires to be encountered.
- Desired response times.

Implementation Program LU-17.b. Forward all development applications to the City of Atwater Fire Department for that agency's review and input regarding fire safety and emergency access issues.

Implementation Program LU-17.c. Continue to provide fire safety education programs to reduce fire incidents and losses.

CRIME PREVENTION



Police protection services within the City of Atwater are provided by the Atwater Police Department. The Police Department currently operates from the main police station located at Bellevue Road, and it has recently opened a substation at Kelso Street in the northern section of the City. There are currently 39 employees in the Police Department. Of these employees, 29 are sworn officers, 17 of which are patrol officers (Gayle Janz, pers. comm.). For current operations, the Police Department has divided the City into two sectors, north and south. Three patrol areas are identified within each sector. There are no formal "beat" patterns.

Land Use, Public Facilities and Community Infrastructure Element

Within the unincorporated portion of the Planning Area, services are provided by the Merced County Sheriff's Department. The Sheriff's Department has its main station in the City of Merced and substations in Los Banos and Hilmar. Calls for service in the unincorporated portion of the Planning Area would most likely be handled by the Merced station.

At the CAADC site, with one exception, security services are provided by a private security force employed by the Castle Joint Powers Authority (JPA) under a caretaker agreement with the Air Force. The Hospital Road area on the site is already within the Atwater City limits; thus, police services are provided by the City's Police Department. Studies related to the CAADC site revealed that an expansion of police services would be required should the site be annexed to the City. The Annexation Feasibility Study stated that the Police Department had prepared a service analysis in which two options for extension of services upon annexation were deemed feasible:

Option 1	Option 2
1 Dispatcher	0 Dispatcher
10 Officers	12 Officers
2 Sergeants	0 Sergeants
25% Commander's Time	25% Commander's Time
10% Chief's Time	10% Chief's Time
	1 Community Service Officer

The Department anticipates that revenue generated from property taxes within the CAADC site would offset the initial costs of providing law enforcement services. Additional officers and equipment will gradually be added in the future as the City's corporate limits, development, and revenues increase.

The Police Department receives a majority of its funding from the City's General Fund. Grant funds are also utilized, when available,

to provide additional revenue for various staff positions and programs. The City currently maintains a standard of 1.20 police officers per 1,000 residents. This standard is expected to be maintained in the future as additional funding becomes available.

GOAL LU-18. Ensure adequate law enforcement services for residents and businesses in the community.

Policy LU-18.1. Strive to maintain the City's standard of 1.20 police officers per 1,000 residents.

Policy LU-18.2. Require all new development to contribute funding toward necessary law enforcement facilities and equipment.

Policy LU-18.3. Collocate police and fire facilities as appropriate to maximize efficiencies.

Policy LU-18.4. Promote ongoing public safety programs including but not limited to, Neighborhood Watch, child identification and fingerprinting, violence prevention, and other public education and crime prevention efforts.

Policy LU-18.5. Consider public safety issues in all aspects of public facility, commercial, industrial, and residential project design.

Implementation Program LU-18.a. Forward all new development applications to the Atwater Police Department to ensure that building and site designs consider utilization of crime prevention features and techniques.

GENERAL GOVERNMENT FACILITIES

Administration for the City is located in City Hall at 750 Bellevue Road. City Hall houses the public works, planning and building, and administrative services departments, as well as the City Manager and the City Clerk. City staff consists of 42 employees, excluding fire and police (Bettina McCoy, pers. comm.).

At this time there are no immediate plans to expand or modify the existing building. However, this may become necessary in the future, as the number of employees increases in conjunction with overall City growth.

GOAL LU-19. Facilitate the efficient provision of services to City residents by City administrative staff.

Policy LU-19.1. Expansion of City Hall should be considered when the ratio of workers to general office floor space drops below 225 square feet per worker. General office floor area includes corridors, waiting areas, and space for special equipment.

Policy LU-19.2. Determine the appropriateness and feasibility of developing satellite service centers for some City services.

Implementation Program LU-19.a. A committee comprised of at least three City staff members shall be appointed to periodically assess (every two years), the adequacy of the City's existing administration facilities and opportunities to increase efficiency and/or the level of service provided to the citizens of Atwater. The findings of the Committee's review, any specific recommendations, and potential sources of funding shall be forwarded to the City Council for consideration.

SCHOOLS



The entire Planning Area is located within the Merced Union High School District. As shown in Figure 2-7, the existing City limits, the CAADC area, the Westside area and most of Southwest Atwater are within the Atwater School District. The southern portion of Southwest Atwater, all of McSwain, and the western half of the Castle Parkway area are within the McSwain School District. The eastern portion of the Planning Area, most of which is expected to remain in current Merced County agricultural and open space uses, is located within the Merced City School District. A small portion of the

Planning Area North of Camellia and west of Santa Fe Drive is within the Winton School District. Land uses proposed in that area include Urban Reserve, Very Low Density Residential, and Commercial.

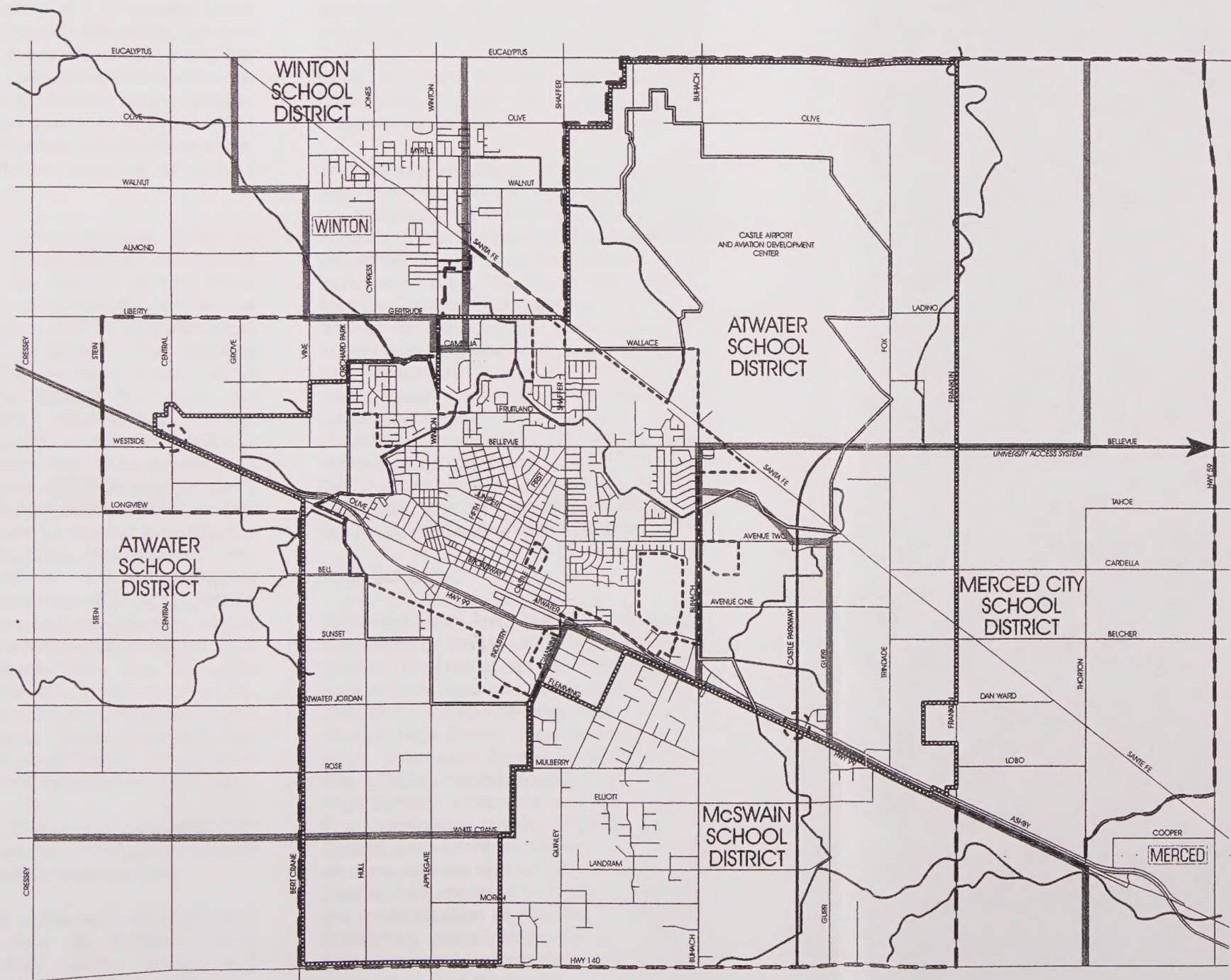
Elementary and Intermediate Schools

The Atwater Elementary School District serves school-aged children in grades kindergarten through eighth (K-8). Its boundaries include the Atwater City limits, the CAADC site, and unincorporated areas west of the City. Within the Atwater District, there are eight general education facilities. Six elementary schools serve students in kindergarten through sixth grade (K-6), and one junior high school serves seventh and eighth grade students. One other school teaches students from kindergarten to the eighth grade (K-8). The total enrollment in the Atwater District for the school year 1997/98 was 4,430 students. Excluding enrollments generated by the former Castle Air Force Base, the Atwater District has experienced an 8.3 percent average annual growth rate in enrollment during the period from 1985 to 1995.

The Atwater District's 1998 Facilities Master Plan indicates that the total enrollment is currently below overall facility capacity. However, enrollment at one school - Elmer Wood Elementary - has exceeded capacity. At another school, Peggy Heller, enrollment for grades seventh through eighth (7-8) has exceeded the capacity of the facilities provided for these students. The number of students in the Atwater District is expected to increase, based on the projected increase in housing construction. Using a model that

ATWATER GENERAL PLAN

School District Boundaries



LEGEND:

- City Limits
- Roads
- Proposed Castle Parkway
- Sphere of Influence (1984)
- Proposed Sphere of Influence
- General Plan Study Area Boundary
- Proposed Interchange
- School District Boundaries



FIGURE 2-7

incorporated conservative assumptions about growth, the Facilities Master Plan forecasted a total student enrollment of 5,404 by the year 2005. By this projection, the number of K-6 students would exceed current capacity by 567, and the number of 7-8 students would exceed capacity by 92. Moreover, under a state budgetary policy, class sizes in the first to third grades (1-3) are encouraged to be reduced to a student/teacher ratio no greater than 20:1. This program may be expanded to other grades in the near future, which would place even greater demands on school facilities.

The extra 7-8 grade students could be accommodated by the addition of modular classrooms at the schools serving these students. However, a new elementary school would be needed by 2003 to handle the extra number of K-6 students. The Facilities Master Plan recommends a 10-acre parcel north of Juniper Avenue and within the current Bellevue Elementary School attendance boundary as the site on which to construct the new school. The estimated cost of the new school would be approximately \$5,650,000. It is also estimated that another \$14,866,000 would be needed to modernize existing school facilities. The Atwater District currently collects the maximum allowable development impact fee of \$1.84 per square foot of new residential construction, part of which goes to the Merced Union High School District. Proceeds from this fee were calculated to be insufficient to fund the facilities needed for projected increases in the number of students. Other funding options, such as a general obligation bond and a Mello-Roos district, have been suggested.

Also in the City, there is one parochial school (St. Anthony's) and two other private schools operated by religious organizations.

Outside Atwater, in the southeastern portion of the Study Area, the McSwain Union Elementary School District provides K-8 education. The McSwain School District presently holds title to a 15-acre site located at Buhach Road and Moran Avenue and is in the process of obtaining the adjacent 25 acres from Merced County. Current planning

calls for construction of a school/park facility on this property.

The District has estimated that at full buildout, the City's General Plan would generate approximately 746 additional students that would need to be served by their facilities. This number is based on the student generation rates calculated in their June 1999 Development Fee Justification Study, prepared by Michael Paoli & Associates.

In order to provide such services, the District has recommended that a 20-acre school site be designated for the construction of a new campus. This site should be located within a residential zone, away from industrial and commercial sites. The District also indicated that the General Plan should ensure ease of access for school pupil transportation via school bus, including adequate driving lanes and appropriate loading zones for pupils. A future school site has been indicated on the Land Use Diagram. This location should be considered approximate. Minor adjustments to the location may be necessary based upon land availability, safety, and access concerns. Modifications to the school site location would not require a General Plan amendment.

High Schools

Within the Study Area, high school education is provided by the Merced Union High School District. The District has four comprehensive high schools and one continuation school. One of the comprehensive high schools is Atwater High School, located along Winton Way. Enrollment figures for 1999 indicate that 2,600 students presently attend Atwater High School. According to a Development Fee Justification Study prepared for the District, enrollment at Atwater High is 761 students over the high school's capacity. The District, has prepared working drawings for the modernization of Atwater High School. Preliminary plans include the renovation of both permanent and portable classrooms, the gymnasium, and the library.

The District has plans to construct another high school in the Atwater area - Buhach High School, near the intersection of Buhach Road

and Avenue Two southeast of the City. The new high school will have an initial capacity for 1,504 students, but plans indicate that ultimate capacity will be 1,700 students. Acquisition of land for Buhach High School took place in 1991, but the closure of Castle Air Force Base postponed the need for opening the facility. Buhach High will open in September 2000 or 2001 depending upon state funding.

Upon reviewing the City of Atwater's 2000 General Plan Land Use Diagram, representatives from the Merced Union High School District have estimated that at General Plan buildout, approximately 5,160 high school students will be need to be accommodated based upon the current student yield per household. The projected capacity of Atwater High School and the proposed Buhach High School is 4,000 students combined.

1,160 students above projected capacity is noted as insufficient to justify a third high school, however, it is enough to make both high schools very crowded.

In 1997, the Merced Union High School District charged a residential development fee of \$1.84 per square foot. The elementary school districts within the District boundaries receive two-thirds of the proceeds; the District keeps the remainder. On January 1998, the State Allocation Board authorized an increase in the maximum statutory development fees to \$1.93 per square foot for residential development. Commercial/industrial development fees also were authorized to be increased from a maximum of \$0.30 per square foot to \$0.31. The District currently does not charge commercial/industrial development fees, but it may do so in the future if revenues from residential development fees are inadequate to fund new facilities that handle demand generated by new development. Within the Winton and McSwain Elementary School Districts, a fee on new residential development of \$3.41 per square foot has recently been authorized.

The elementary school district would receive 59 percent of the proceeds, and the high school district would receive the remainder.

Post-Secondary Education

There are no colleges or other institutions of higher learning within the City. The nearest college is Merced Community College in the City of Merced. Merced is also home to a branch of Chapman University, a private university that specializes in education for working adults. Other colleges within a 60-minute commute from the City include Modesto Community College, California State University Stanislaus in Turlock, Fresno Community College and California State University Fresno. The University of California plans to build a campus north of Merced, adjacent to Lake Yosemite. The new campus, which will be called UC Merced, is scheduled to teach its first classes in 2005.

GOAL LU-20. Provide primary and secondary educational facilities to accommodate projected enrollments.

Policy LU-20.1. Work with local school districts to identify appropriate locations for future school sites and facilities.

Implementation Program LU-20.a. The City shall monitor residential growth within the City and make that information available to local school districts to facilitate school planning efforts.

Implementation Program LU-20.b. The City shall explore opportunities for new school facilities to include "joint use" facilities for other City, County, and secondary education service provider programs and services.

GOAL LU-21. Maintain and enhance the quality of educational opportunities available to Atwater residents.

Policy LU-21.1. Support efforts by the Atwater Elementary School District, McSwain School District, Merced City School District, Winton School District, and the Merced Union High School District to secure adequate funding for new facilities by Proposition 1A funding, under the provisions of SB 50, as appropriate.

Policy LU-21.2. Continue to support the collection of school fees consistent with the maximum allowable amount permitted under state law.

Policy LU-21.3. Provide adequate infrastructure for new school facilities in a timely manner.

Implementation Program LU-21.a. The City shall provide timely and accurate information required by the school districts for any school facilities needs analysis conducted in order to secure adequate funding via development fees, as required by SB 50.

Implementation Program LU-21.b. The City shall revise its Capital Improvement Program to schedule and fund necessary infrastructure improvements in areas where new school facilities will be constructed before such facilities are scheduled to be open.

LIBRARIES



There is one library within the City limits - the Atwater Branch of the Merced County Library, located on Third Street. This facility is part of the Merced County Library system. Service at the Atwater branch has been reduced in recent years due to budget cutbacks. A library loan program has been eliminated, and reference services have been reduced. The library relies on volunteers and a support organization for services such as staff support and the purchase of books. However, the library does offer reading programs for children. Service in Spanish is also available. The building contains a meeting room that may be used by the public, but only by nonprofit groups. Near term improvements in

library services and capabilities include a computer with Internet access and computerization of the Atwater branch's checkout process. Otherwise, there are no immediate plans for any major changes in library service at this time (Amanda Kelly, pers. comm.).

GOAL LU-22.1. Promote the maintenance and enhancement of library services and facilities that are available to the community.

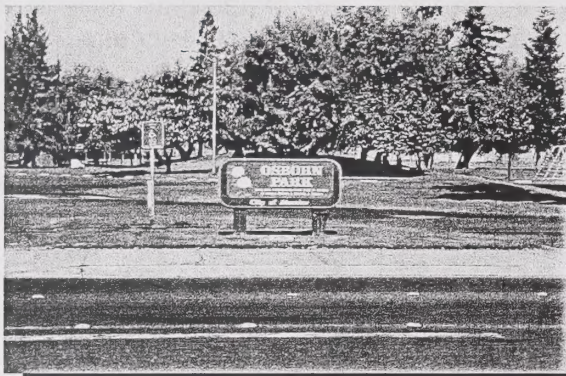
Policy LU-22.1. Encourage the efforts of the Merced County Library to continue to improve the quality and availability of library resources and services offered at the Atwater branch facility.

PARK AND RECREATION FACILITIES

The National Recreation and Parks Association (NRPA) has developed definitions for types of recreational facilities which, with modifications, are as follows:

Mini-Park: A specialized facility that serves a concentrated or limited population or specific groups such as tots or senior citizens. This facility should be located within neighborhoods and in close proximity to apartment complexes, townhouse development, or housing for the elderly.

Neighborhood Park: Area for intense recreational activities such as field games, court games, crafts, playground apparatus, skating, picnicking, wading pools, etc. Neighborhood park sites should be suited to neighborhood populations and geographically located for safe walking and bicycle access for intense development and easy access.



Community Park: Area of diverse recreational value including intense recreational facilities such as athletic complexes and pools, as well as more passive uses such as picnicking, viewing, nature study, and other types of recreational development.

Regional Park/Park Preserve: Area of natural or ornamental quality for outdoor recreation such as picnicking, boating, fishing, swimming, camping, and trail uses, with much of the land reserved for conservation and natural resource management.

State law and policies, as expressed particularly in the requirements for the Open Space Element of the General Plan, promote the retention of open space for recreational purposes. Beyond the general requirements, however, no specific standards have been established. Rather, it has been left to the local governments to decide how much land should be set aside as open space. The NRPA has established guidelines for the amount of recreational land necessary to serve a given population. These guidelines, presented in Table 2-11 below, are oriented largely toward more metropolitan areas. For example, a "neighborhood park" as defined by NRPA would serve a population of up to 5,000 people. Therefore, the NRPA advises each jurisdiction to establish its own standards that are tailored to the unique characteristics of the area, rather than to adopt the guidelines verbatim.

Table 2-11
NRPA Recreation Land Guidelines

Type of Park	Service Area Radius	Desirable Size (Acres)	Acres per 1,000 Pop.
Mini-park	< 1/4 mile	1 acre or less	0.25 - 0.5
Neighborhood Park	1/2 - 1 mile	15+ acres	1.0 - 2.0
Community Park	1 - 2 miles	25+ acres	5.0 - 8.0
Regional Park	1 hour drive	200 - 1,000 acres	Variable
Total			6.25 - 10.5

The Atwater Recreation Department manages park and recreational facilities in the City, including the Atwater Community Center. There are 18 parks within the City. Table 2-12 lists all of the City parks, along with the acreages and facilities offered. Within the Atwater City limits, there are 77.62 park acres, which is approximately 3.37 park acres per 1,000 population. This is below the ratios recommended in the NRPA guidelines. However, the City is not required to maintain a particular parkland ratio.

Approximately 119 acres have been designated as Park on the 2000 General Plan Land Use Diagram. This does not include any parkland which may be designated in the Southwest Atwater Specific Plan areas or the approximately 123 acres designated as Recreation. If all of the land currently designated as Park is developed with public park facilities in the future, and the buildout population of 64,172 persons is achieved, a standard of 1.85 acres of parkland per 1,000 population would be maintained. The actual ratio of parkland per 1,000 population that is developed is expected to be much higher as sites are identified, acquired, and developed in the Southwest Atwater Specific Plan areas.

Even before the closure of Castle Air Force Base, some of the recreational facilities on the base have been open to the public.

**Table 2-12
City of Atwater Existing Parks**

Park Name	Acreage	Location	Facilities
Albiani Park	5.00	East Grove Ave.	Picnic tables, soccer fields
Bloss Park and Grounds	1.70	Area bounded by Broadway, First St., Drakeley Ave. and Second St.	Picnic tables, decorative fountain, rose garden, Bloss House Museum
Veterans Park	17.90	Buhach Rd. @ N. Bellevue Rd.	Playground equipment, picnic tables, barbecues, picnic shelter, ball fields with dugouts and lights, tennis court, basketball court
Cedar Park	0.90	Cedar Ave. @ Packers St.	Playground equipment, barbecues, picnic tables
Civic Center Grounds	3.87	750 Bellevue Rd.	Picnic table, decorative fountain, rose garden
Community Center Grounds	3.70	760 E. Bellevue Rd.	Decorative fountain, benches
E.L. Walters Park	2.30	Alabama St. @ Village Circle Dr.	Playground equipment, picnic tables
Girl Scout Hut Open Space	1.47	1659 Second St.	Picnic tables, fire pit, clubhouse
Heller Park	0.74	Heller Ave. @ Herman St.	Playground equipment, barbecue, picnic tables, tennis court
Joan Faul Park	9.90	2001 Bridgewater St.	Playground equipment, picnic tables, restroom facility, soccer fields
Manuel Bairos Park	4.80	Lakeview Dr. @ Shoreline Dr.	(unimproved)
Memorial Ball Park	2.49	Elm St. @ Packers St.	Baseball field with dugouts, backstop, scoreroom, concession stand, lights and restroom facilities
Osborn Park	14.00	Bellevue Rd. @ Livingston Canal	Playground equipment, picnic tables, barbecues, lighted tennis courts, ball fields, concession stands, scoreboards, restroom facilities, horseshoe pits
Power Line Open Space	1.77	Channel Ave. @ Shaffer Rd.	Open turf
Ralston Park	4.84	Third St. between Fir Ave. and Grove Ave.	Playground equipment, picnic tables, barbecues, tennis court, restroom facilities, picnic shelter
Sandlewood Basin	1.75	Winton Way @ 250' South of Carter Way	Open turf
Winton Way Park	0.41	1392 Winton Way @ Elm Ave.	Picnic tables

Source: City of Atwater (Recreation Superintendent's Office)

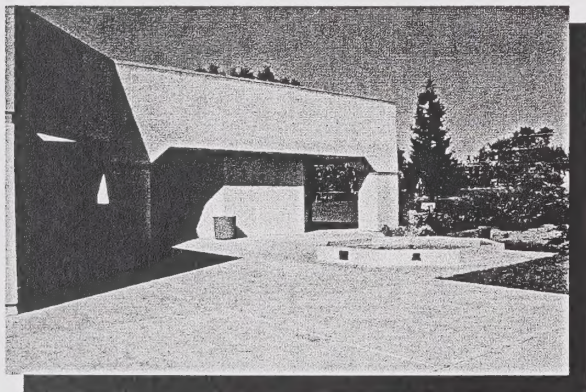
Veterans Park, located at the intersection of Bellevue and Buhach Roads, contains a picnic area that was open to the public during working hours. It also has a youth center, softball, and football/soccer fields. Veterans Park is now managed by the Atwater Recreation Department. Other base facilities now potentially available to the public include a gymnasium and a recreation center. Southeast of the gymnasium are two baseball fields, a football/soccer field, a running track, and a cross-country running course. Located

in the same block as the recreation center are a large outdoor swimming pool and tennis courts. Another pool and more tennis courts are located near the Officers' Club building.

In addition to the parks, there are other facilities in the City that are used for recreational activities. The Atwater Community Center, located at 760 East Bellevue Road, contains a multi-use room and a senior citizens' room, along with kitchen and restroom facilities. Future plans



for the Community Center include the expansion of the multi-use room, the addition of a teen room, and an arts and crafts room. The Youth Center at Veterans Park has an indoor basketball court and several activity rooms. The facility hosts a Boys and Girls Club. Another specialized recreational facility is the Rancho Del Rey golf course, a private facility located within the southeastern section of the City, but under the jurisdiction of Merced County.



Beyond the Atwater City limits, a county park is located in Winton. Another county park, outside the Study Area, is Lake Yosemite northeast of Merced. This park offers boating, swimming, fishing, waterskiing, windsurfing, and picnic areas. The Merced Irrigation District manages the Lake McClure-McSwain Recreation area 27 miles northeast of Merced. There are campsites available, along with picnic areas, boating, waterskiing, fishing, swimming, and hiking activities. Approximately 75 miles northeast of Atwater is Yosemite National Park, a highly popular attraction offering numerous scenic vistas and recreational opportunities.

GOAL LU-23. Develop a comprehensive strategy for parkland acquisition, construction, and maintenance which meets the community's adopted standards for recreation facilities.

Policy LU-23.1. Strive to maintain or exceed a minimum standard of 3.0 acres of public park land per 1,000 population.

Policy LU-23.2. Ensure that park and recreation facilities are distributed equitably throughout the community.

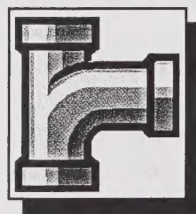
Policy LU-23.3. Identify areas of the City that are deficient in park and recreational facilities and assign top priority for future park construction to these areas.

Policy LU-23.4. Incorporate park and recreation facilities within the CAADC into the City's park system, as appropriate.

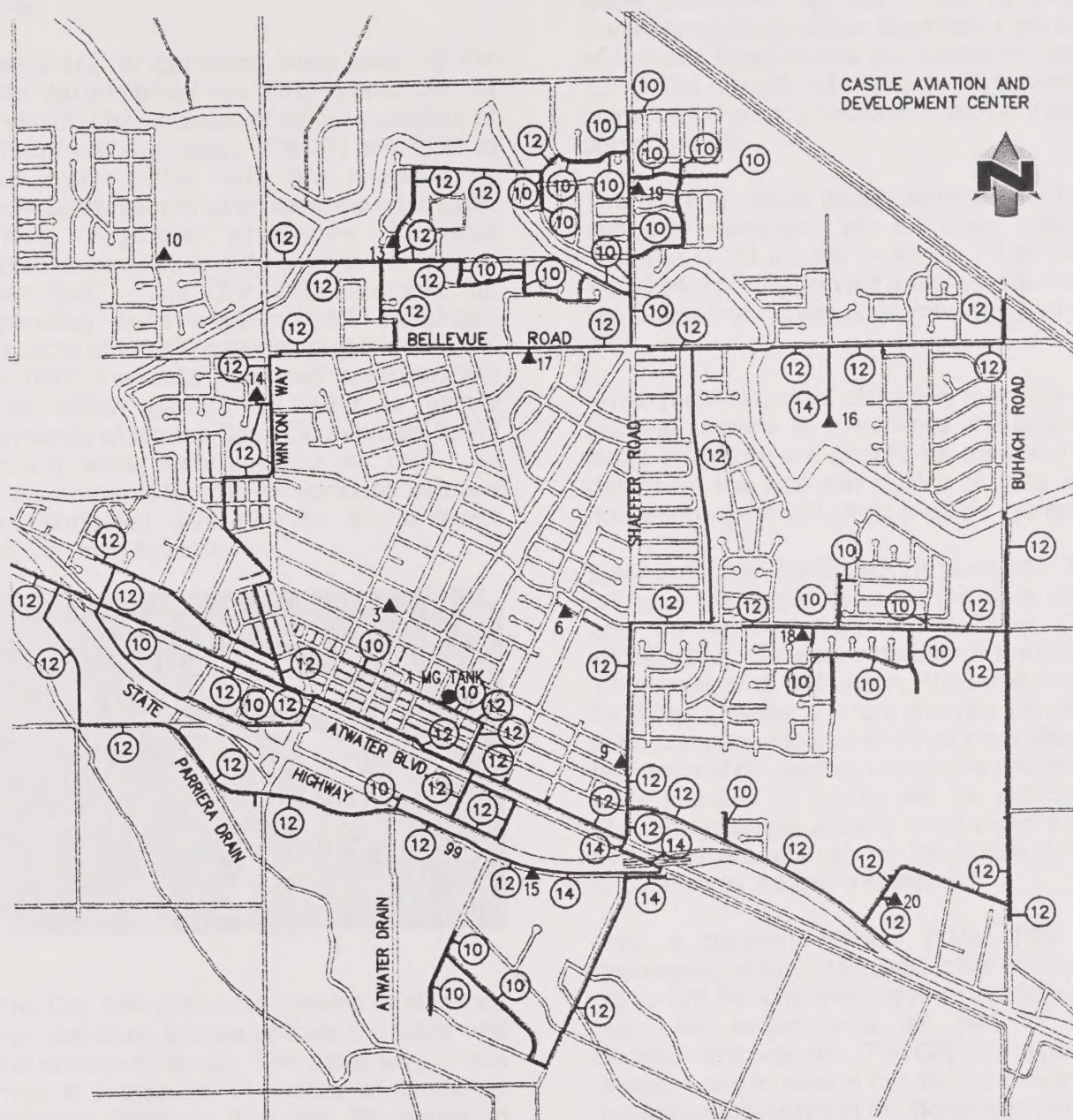
Policy LU-23.5. Encourage private ownership and operation of park and recreation facilities located within the CAADC that are not incorporated into the City's system.

Implementation Program LU-23.a. Prepare a master plan for City parks and recreational facilities that prioritizes needs, identifies sites for new facilities, and establishes funding mechanisms. The financial strategy may include, but is not limited to, parkland fees, grant funding, public-private partnerships, and opportunity purchases.

WATER SUPPLY, TREATMENT AND DISTRIBUTION



The City obtains water for domestic use from a system consisting of groundwater wells and a one million-gallon elevated tank that is used for peaking storage and fire flows (Figure 2-8). Residents and businesses in the unincorporated areas obtain their domestic water from either private wells or small water companies. Small water companies, which may have from 15 to 199



LEGEND:

▲¹⁶ Water Well and Number

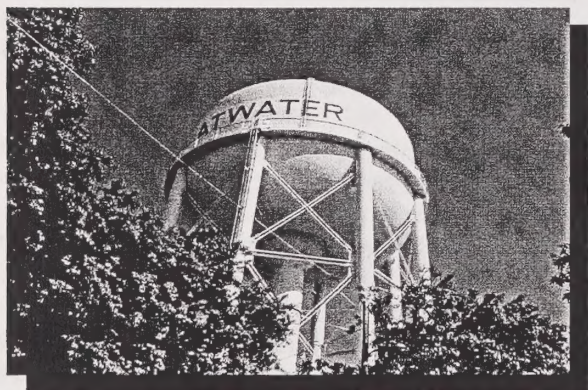
● 1 Million Gallon Reservoir

⑩ Existing Water Line 10" or Greater Diameter Shown in Inches

Land Use, Public Facilities and Community Infrastructure Element

connections, serve their customers through small water systems emanating from their wells.

There are 10 operating wells used by the City. An additional well (#10) is used only on a standby basis because of the presence of dibromochloropropane (DBCP) and EDB in the water. The wells are operated by individual pressure switches at the wellheads, which regulate pressures between approximately 45 and 65 pounds per square inch (psi). The City estimates that the operating wells have a total production capacity of 17,600 gallons per minute (gpm). In 1997, the wells produced approximately 2.66 billion gallons of water to satisfy demands within the City. On average, 5,067 gpm of water were pumped per day. All groundwater is treated with chlorine before it is distributed through the City's water conveyance system.



The City has a network system of pipelines that distribute the water from the wells and the storage reservoir. The pipes vary in size from 4 inches to 14 inches in diameter. Existing pipelines that are 10 inches in diameter or larger are shown in Figure 2-8.

There are areas that have historically had periods of low water pressure. Some of the areas are in the older part of town and areas east of Shaffer Road. These areas have smaller sized lines and will continue having lower water pressure unless funding becomes available to retrofit the areas with larger lines. The City is connecting the smaller lines on Shaffer Road when the road is being reconstructed. This will connect many of the smaller lines to a 12-inch

mainline and should increase the pressure. The northeast area has also experienced low water pressure. A 1997 report by Boyle Engineering Corporation identified a section of Buhach Road where the installation of a 2,350-foot length of 12-inch pipe would increase the water pressures in the northeast part of the City.

The existing million gallon storage tank has only one connection into the water system grid that is 10 inches or larger. The tank would be more effective if there were at least two large line connections into the 12-inch grid.

When redevelopment of the two former base housing projects is considered, the existing water infrastructure should be reviewed to determine the size and quality of lines and how the projects will effect the City system.

If annexation of the CAADC is pursued in the future, it will trigger the need for more wells and connections into the existing City infrastructure. One consideration is the single 12-inch pipeline at Buhach Road and Santa Fe Drive. Detailed system analysis will need to be completed to see whether there should be a second connection or whether additional wells installed at Castle will be sufficient. This analysis has already been triggered in part by recent requests by the Prison Board to connect to the City's system.

Until a detailed Master Water Plan is developed, proposed projects in the northeast portion of the City may need to analyze the need for larger lines as part of the development process. The City has required development to extend the 10-inch line from Juniper to Broadway in the Southeast part of town. There has historically been good water pressure in the northwest part of town, despite the lines being no larger than 8-inch diameter. Wells 3 and 10 are out of production due to chemical contamination. Wells 9 and 15 are on a stand-by status due to chemical contamination. Well 16 is currently operated by system demand to assist in the TCE removal at the CAADC. By not operating well 16, the TCE plume may not migrate away from the removal equipment at Castle. This project is being studied by Jacobs Engineering.

The City publishes an annual water quality report. The reports from 1993 to 1997 state that the water supplied by the City meets or exceeds all of the standards set by the State of California and by the federal government. City records indicate the amount of chlorine used in the system monthly, and the residual chlorine is tracked.

Due to concerns over groundwater contamination from trichloroethylene (TCE) from the former Castle Air Force Base, regional DBCP and EDB contamination problems and additional City growth, Wells 16, 17, 18, 19, and 20 were added to the City system. These wells are all located in the northeast and southeast parts of the City, in proximity to the CAADC site. The new wells were drilled deeper than previous wells, and they are generally sealed down to approximately 300 feet below ground level to reduce the possibility of contamination. The Groundwater Resources section of Chapter 4.0 discusses groundwater contamination in more detail.

The CAADC site currently obtains all of its water from on-site wells. Most of the older, shallower wells that have existed on the site have been taken out of service due to poor water quality or other problems. The airfield and the area to the south are currently served by two newer wells which are approximately 900 feet deep. Combined, these two wells have a maximum production capacity of 2,400 gpm. Three older wells have been serving minor facilities within the northeast properties on the site. Additional connection to the City's system is being considered to serve the Prison facility.

The Merced Irrigation District (MID) and the cities of Merced County recently cooperated in a regional groundwater study. The Merced Water Supply Plan, which emerged from the study, concluded that groundwater would be the major source of potable water for the County. The plan describes methods and locations for construction of groundwater recharge basins. The City will be involved in the groundwater recharge and monitoring plan.

Through the preparation of the 2000 General Plan update, the City has identified four

primary growth areas. Land use designations have been applied in the Westside, CAADC Fringe, and Castle Parkway areas which can be used to estimate the level of infrastructure necessary to provide water, sewer, and storm drain services in those locations. Land use designations in the Southwest Atwater area will be applied in the future through the preparation of three individual Specific Plans. Since the proposed mix and configuration of land uses in these areas has not been defined at this time, the infrastructure needs for the Southwest Atwater Specific Plan areas will be evaluated in conjunction with the preparation of each individual plan.

The preliminary infrastructure analysis prepared by Garcia-Davis-Ringler Engineering (GDR) for the 2000 General Plan evaluated water facility demand and infrastructure needs to serve the Castle Fringe area which has been divided into three sub-areas referred to as 1A, 1B, and 2. The Castle Parkway area has been identified in the analysis as Area 3. The Westside area is identified as Area 4.

Water usage rates used in the analysis are described below :

- Business Park - 1,500 gallons per acre per day (GPD).
- Commercial - 1,500 (GPD).
- Residential - 175 gallons per capita per day (GPCD). Density for residential uses was calculated as follows:
 - LDR - 5.0 du/acre with 3.0 persons/unit.
 - MDR - 11.0 du/acre with 3.0 persons/unit.
 - HDR - 25.0 du/acre with 3.0 persons/unit.

Table 2-13 estimates the average daily water demand associated with the identified growth areas at buildout.

Based upon the information provided in Table 2-13, the system expansion average daily use or demand is estimated to be approximately 6.8 MGD. Using a peaking factor of 1.7 for maximum day, the system would require six wells at an average of 1,700 gallons per minute (gpm) to provide maximum day plus fire flow (8,090 gpm + 2,000 gpm). The number of wells will be determined on the ultimate yield of each well and may require more than six. The existing and planned

storage tanks in the City and at the CAADC are proposed to handle peak hour flows of 12,100 gpm, using a peak hour rate of 1.5 times maximum day. The Castle AFB Annexation Feasibility Study (1996) stated that the CAADC was expected to utilize 2.65 to 3.0 MGD at buildout and that there would be a grid system of 12-inch and 16-inch lines, at least one production well and another 500,000-gallon storage tank. No map was included in the study, but it was assumed that these components would tie into the proposed expansion grid in the northeast portion of the City.

Figure 2-9 depicts the layout of the preliminary water plan that has been developed based upon the findings of the GDR analysis. The preliminary cost estimate for all identified water system improvements, including operating and maintenance costs and a supply and distribution system for the CAADC, is \$13,282,500 (1999 dollars).

The City can continue to provide portable water to future development. As described within the GDR analysis, this will require the drilling of more wells and expanding the existing conveyance infrastructure. The City is in the process of completing a Water System Master Plan, which will facilitate long range planning, and provide more definitive information regarding precise system improvements and refined cost estimates. From this information a system phasing and financing strategy can be developed.

The City will also continue to monitor the ongoing groundwater cleanup by the Air Force at the CAADC site, as those efforts will influence the placement of future wells and could affect the water quality of existing wells. There are presently no substantial water supply limitations that would prevent the reuse or expansion of the CAADC site. The newer wells are deep enough to escape the contamination problems that exist at the shallower wells.

Table 2-13
Estimated Water Demand
Atwater Growth Areas

Acres	Use	Capita	Water/ GPD	Water/ MGD
Area 1A				
750.0	UR/BP	--	1,125,000	1.125
Area 1B				
550.0	UR/BP	--	825,000	0.825
Area 2				
520.0	BP	--	780,000	0.78
22.0	COM	--	33,000	0.033
14.0	MDR	462	80,850	0.08085
Area 3				
371.0	BP	--	556,500	0.5565
382.0	COM	--	573,000	0.573
78.0	MDR	2,574	450,450	0.45045
529.0	LDR	7,935	1,388,625	1.388625
Area 4				
152.0	BP	--	228,000	0.228
218.0	COM	--	327,000	0.327
4.0	HDR	300	52,500	0.525
162.0	LDR	2430	425,250	0.42525
Total for All Areas				
3,752.0	All	13,701	6,853,550	6.85

Source: GDR Engineering

SEWAGE COLLECTION AND TREATMENT



The City provides sewage disposal and treatment using a pipeline system, pump stations, and a wastewater treatment plant (WWTP) that serves Atwater, Winton, and the CAADC site. Figure 2-10 depicts the existing sewer system in the City, including the location of pipelines 10 inches or larger in diameter. The treatment plant, located south of Highway 99, handles an average flow of 3.0 million gallons per day (MGD). Based on the Atwater Operations

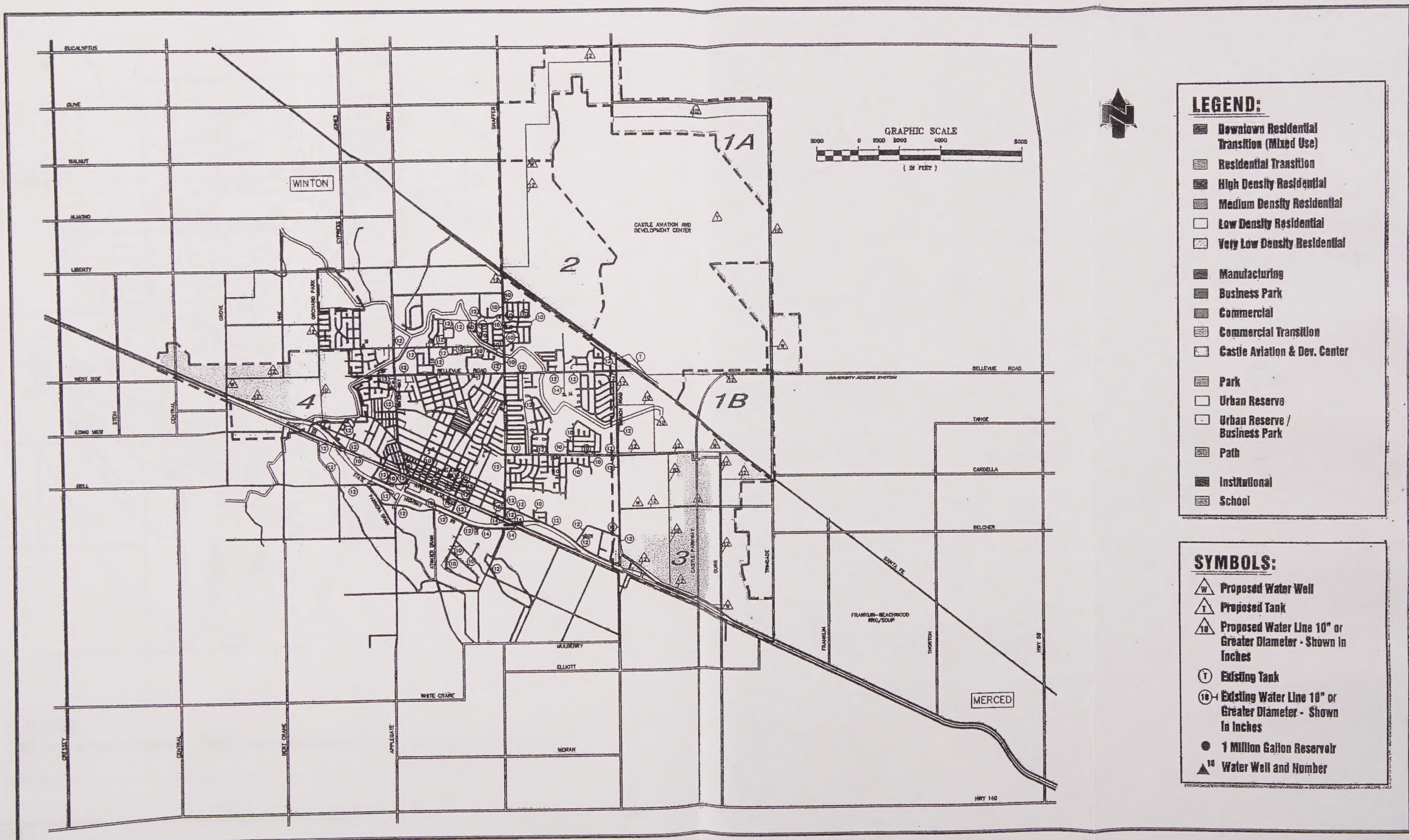
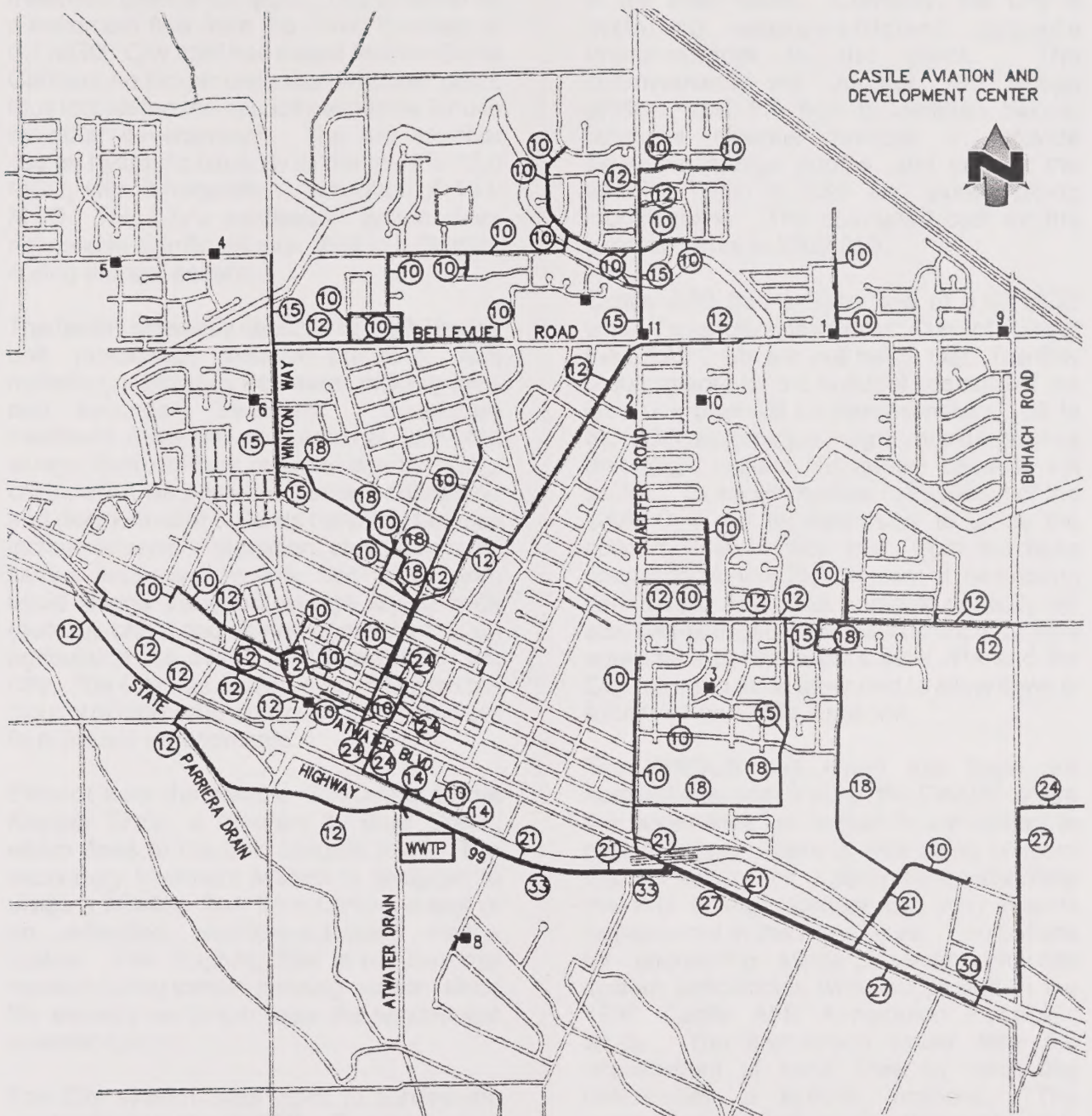


FIGURE 2-9
WATER PLAN



LEGEND:

■⁸ Sewer Lift Station & Number

WWTP Waste Water Treatment Plant

10 Existing Sewer Line 10" or Greater Diameter Shown in Inches

and Maintenance manual, the design average dry weather treatment capacity for the treatment plant is 6.0 MGD. This is based on a maximum flow from the Davis Cannery of 0.7 MGD. City staff has stated that the Davis Cannery no longer uses the treatment plant, thus increasing the capacity available for use by other development. The wet weather design hydraulic capacity of the plant is 12.0 MGD, with a regulation restriction of 10.0 MGD. The City's wastewater system does not receive significant quantities of infiltration during the wet season.

The facility presently consists of the following unit processes: influent pumping, flow metering, preliminary treatment, trickling filter, and secondary treatment. Secondary treatment includes: conventional activated sludge, final clarifiers, return sludge pumping, chlorination with chlorine contact chambers, and dechlorination. Solids handling facilities include anaerobic digestion, sludge storage, sludge thickening (gravity belt thickeners), liquid sludge transport, sludge drying beds (back-up only), and sludge application on an agricultural site owned and operated by the City. The City has obtained permits from the County of Merced to apply sludge on a private farm for soil amendments.

Effluent from the plant is discharged to the Atwater Drain, a tributary to Bear Creek, which flows to the San Joaquin River. The secondary treatment system is designed to utilize a trickling filter for roughing ahead of an extended aeration-activated sludge system. The roughing filter is not currently needed during tomato canning season, since the cannery no longer uses the wastewater treatment plant.

The City system uses pipes to convey the wastewater to the WWTP. The pipe sizes vary from 6 inches in diameter to 33 inches in diameter. Transport of wastewater is partially handled by gravity flow, but lift stations are required to adequately deliver wastewater to the treatment plant. There are 15 lift stations available for use, with pumping capacities ranging from 100 gpm to 900 gpm.

The plant operator of the Atwater WWTP has identified some recurring problems: primary clarifier restrictions, influent flow surges,

odors, and old/new activated sludge (RAS) systems. These problems will be addressed in the near future. Currently, the City is installing energy-efficient upgrade improvements to the plant. The improvements will upgrade the sludge system, split the flow to aeration basins, renovate digester number 1, provide thickened sludge pumps, and convert the aeration basin to SSB and sludge piping modifications. The estimated cost for the improvements is \$602,000.

Castle AFB had a base flow of 0.53 MGD when it was fully operational. Current flows at the CAADC site are well below that. The flow requirements for the buildout scenario of the land use plan will be approximately 2.65 to 3.0 MGD, assuming nonagricultural type uses that might require substantial capacity set asides. To accommodate full buildout of the CAADC, it will be necessary to utilize the second 12-inch force main from the base connecting to the City's system at the existing tie-in point. Additional pumping capacity will also be necessary, and the current treatment agreement between the Castle JPA and the City will need to be amended to allow flows in excess of one million gallons.

The RWQCB has noted that there are numerous locations within the CAADC where the sewer lines are broken or are subject to root intrusion. There is also some concern that portions of the system are approaching the end of their lifetime and may require replacement in the near future. Two options for addressing sanitary sewer collection system deficiencies were suggested in the 1996 Castle AFB Annexation Feasibility Study. The first option would defer the replacement of trunk lines by correcting deficiencies at specific locations. The preliminary cost estimate for this approach is \$250,000. Under the second option, the City would assume the responsibility for the replacement of key trunk lines, which are those greater than eight inches in diameter. Individual projects would bear the responsibility for connection to the main lines, even if it requires off-site extensions of smaller lateral lines connecting to the system. The second option also includes lift station pump upgrades. The preliminary cost estimates, including operations and

maintenance costs, range between \$425,000 and \$1,046,600.

In the near term, the extension of some sewer lines will be required to service the Price Property Development and the new high school in the eastern section of the City. The applicant for the Price development has plans to install sewer lines along Juniper Avenue, along the west side of the Rancho Del Rey golf course, and along Broadway and Green Sands Avenues. These lines would run directly to the treatment plant; thus, the development would not impact existing sewer lines.

The preliminary infrastructure analysis prepared by Garcia-Davis-Ringler Engineering (GDR) for the 2000 General Plan evaluated sanitary sewer facility demand and infrastructure needs to serve the Castle Fringe area which has been divided into three sub-areas referred to as 1A, 1B, and 2. The Castle Parkway area has been identified in the analysis as Area 3. The Westside area is identified as Area 4.

Sewer usage rates used in the analysis are described below :

- Business Park - 1,200 gallons per acre per day (GPD).
- Commercial - 1,200 (GPD).
- Residential - 100 gallons per capita per day (GPCD). Density for residential uses was calculated as follows:
LDR - 5.0 du/acre with 3.0 persons/unit.
MDR - 11.0 du/acre with 3.0 persons/unit.
HDR - 25.0 du/acre with 3.0 persons/unit.

Table 2-14 estimates the average daily sanitary sewer demand associated with the identified growth areas at buildout.

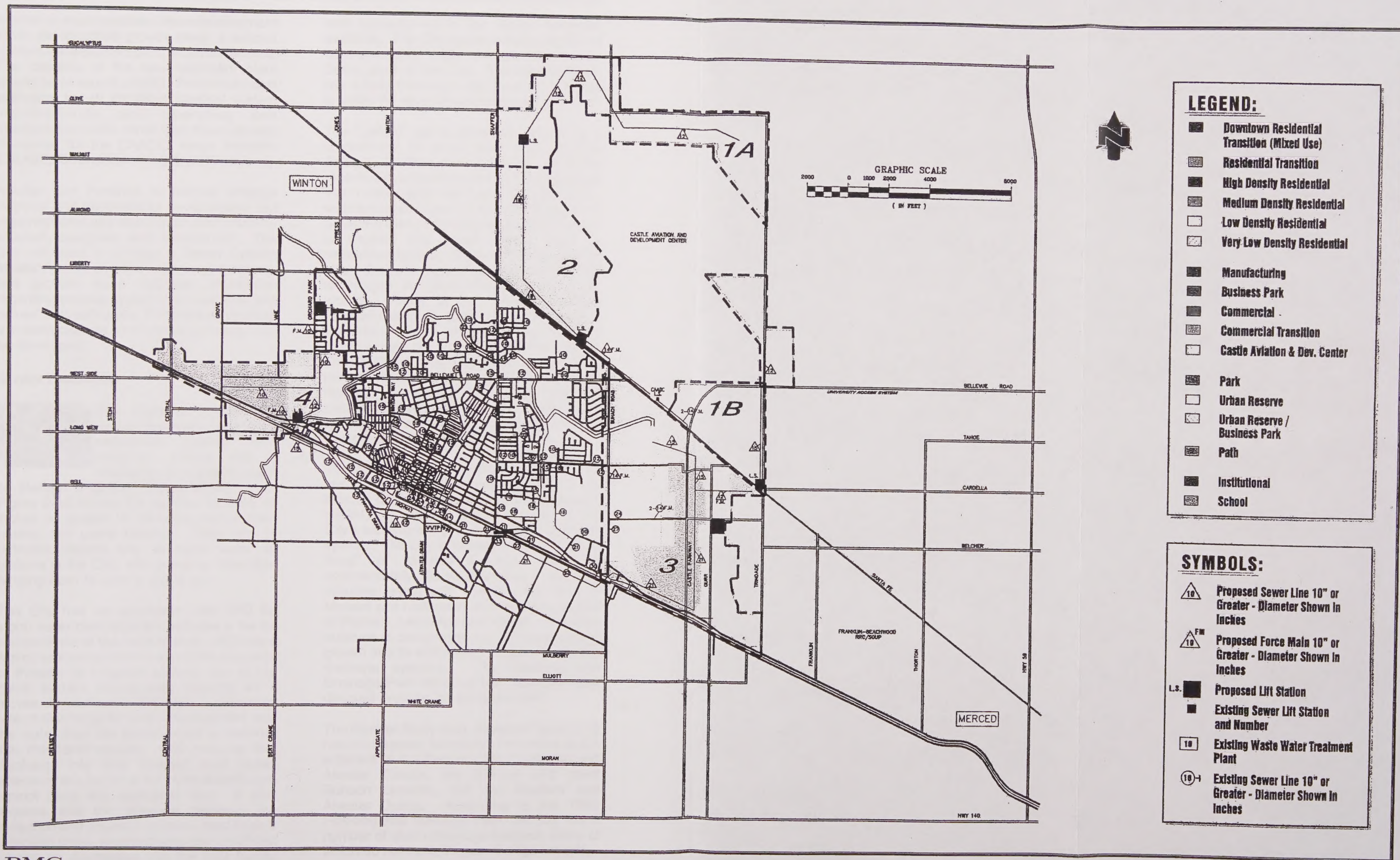
From Table 2-14, the system expansion average daily use or demand is estimated to be approximately 4.93 MGD. For their report, GDR assumed 5.0 MGD.

Table 2-14
Estimated Sanitary Sewer Demand
Atwater Growth Areas

Acres	Use	Capita	Sewer/ GPD	Sewer/ MGD
Area 1A				
750.0	UR/BP	--	900,000	0.9
Area 1B				
550.0	UR/BP	--	660,000	0.66
Area 2				
520.0	BP	--	624,000	0.624
22.0	COM	--	26,400	0.0264
14.0	MDR	462	46,200	0.0462
Area 3				
371.0	BP	--	445,200	0.4452
382.0	COM	--	458,400	0.4584
78.0	MDR	2,574	257,400	0.2574
529.0	LDR	7,935	793,500	0.7935
Area 4				
152.0	BP	--	182,400	0.1824
218.0	COM	--	261,600	0.2616
4.0	HDR	300	30,000	0.03
162.0	LDR	2430	243,000	0.243
Total for All Areas				
3,752.0	All	13,701	4,928,100	4.93

Source: GDR Engineering

Figure 2-11 depicts the layout of the preliminary sanitary sewer plan that has been developed based upon the findings of the GDR analysis. The sewer system was laid out using a series of 10-inch to 21-inch sewer lines and includes lift stations, as well as force mains. The existing treatment plant currently handles approximately 3.0 MGD. The design average dry weather treatment capacity for the treatment plant is 6.0 MGD. As previously discussed, the CAADC at buildout is estimated to generate 2.65 to 3.0 MGD. If only 2.65 MGD were utilized by the CAADC, the remaining 0.35 MGD could be allocated for residential use and would serve approximately 3,500 persons.



In order to accommodate future development within the identified growth areas, a second wastewater treatment plant would be needed. The capacity of the new treatment plant should be at least 5.0 MGD. Preliminary cost estimates for all identified sanitary system improvements and operating and maintenance costs, other than those already discussed for the CAADC, range between \$36,497,260 and \$56,497,260 (1999 dollars).

Atwater can continue to provide sewage disposal and treatment for development, but improvements and new construction must be planned, designed, and constructed. The City will need to prepare a Sewer System Master Plan to facilitate long range planning, and provide more definitive information regarding precise system improvements and refined cost estimates. From this information a system phasing and financing strategy can be developed.

STORM DRAINAGE



The City's storm drainage system generally consists of retention basins and detention basins with a discharge to a natural drain or Merced Irrigation District (MID) canal. Figure 2-12 shows the pipeline facilities 24 inches or greater in diameter, storm drain basins, and pump stations. There are 13 detention basins and 16 storm water lift stations in the City, with pumping capacities ranging from 75 gpm to 8,000 gpm.

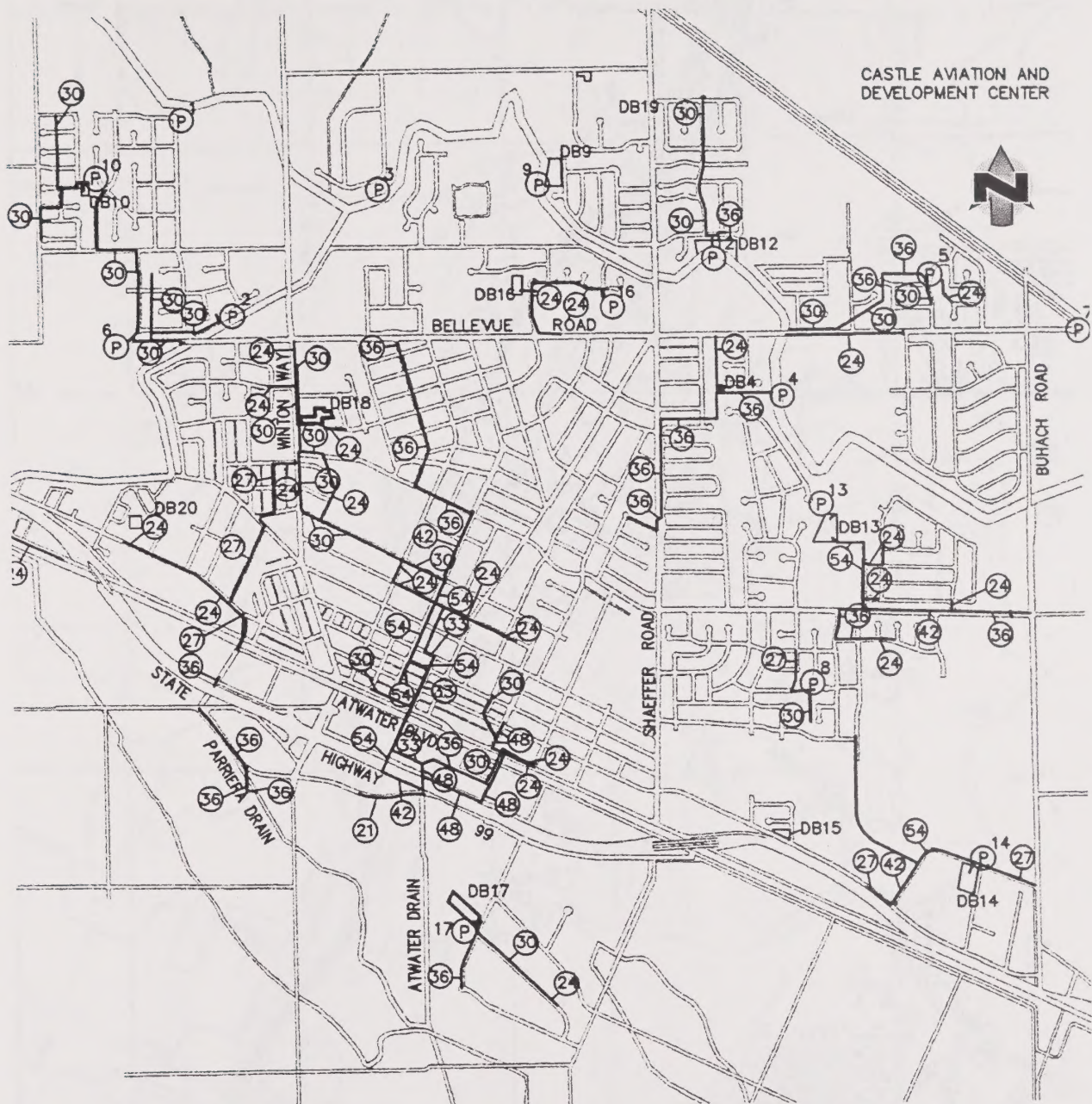
The City has an agreement with MID for storm water discharge that includes a fee for maintenance of the canal system. MID has a limited amount of storm water to be disposed of through its irrigation system, due to the canal system having less capacity as it moves downstream. MID sets a maximum rate of discharge for each development, and the water from the development is metered into the canal system. MID requires that discharge into their facilities must cease whenever the facility at the point of discharge cannot carry any additional flow. It also requires that the interface between the collection and disposal systems must have a detention basin, which collects any runoff that cannot be discharged into the MID facility

until capacity within the facility becomes available. The City drains a major portion of its storm drain water through the Atwater Drain, south of the City. The Atwater Drain has a fixed discharge rate; thus, the City has to meter the flows through the small channel.

The CAADC site is presently served by a combination of storm water lines, surface drainage facilities, and channels. All of the channels eventually merge, and the collected storm water exits the Castle property at the southernmost corner of the site adjacent to Santa Fe Drive. The discharged storm water is emptied into Canal Creek, which is maintained by MID. The northeast properties utilize the same type of drainage system that discharges in Canal Creek in the same vicinity. Most of the CAADC facilities generally employ direct discharge without detention. More recent construction has incorporated storm drain detention ponds. The facilities delay discharge during heavy rains so that additional demand on existing facilities is spread out over time by containment and subsequent pumping. New construction at the CAADC would be required to provide similar detention systems.

The Merced County Critical Area Flooding and Drainage Plan, prepared in 1983 for the Merced County Association of Governments (MCAG), discussed some aspects of the City's existing and proposed storm drainage system. The City is located within a "Critical Area" of Merced County, which is approximately 180 square miles in size and includes, along with Atwater, the cities of Merced and Livingston and the communities of Planada, LeGrand, and Winton. This area received its designation due to the population growth and its anticipated impact on existing drainage systems. The Flooding and Drainage Plan looked at both collection and disposal systems for surface runoff.

The Atwater Study area, shown in Figure 2-13 has six disposal waterways that cross or are adjacent to it. They are the Livingston and Atwater Canals, the Buhach and West Buhach Laterals, and the Parriera and Atwater Drains. According to the 1983 Flooding and Drainage Plan, the City has a number of storm drainage systems, many of which do not have 10-year design capacity.



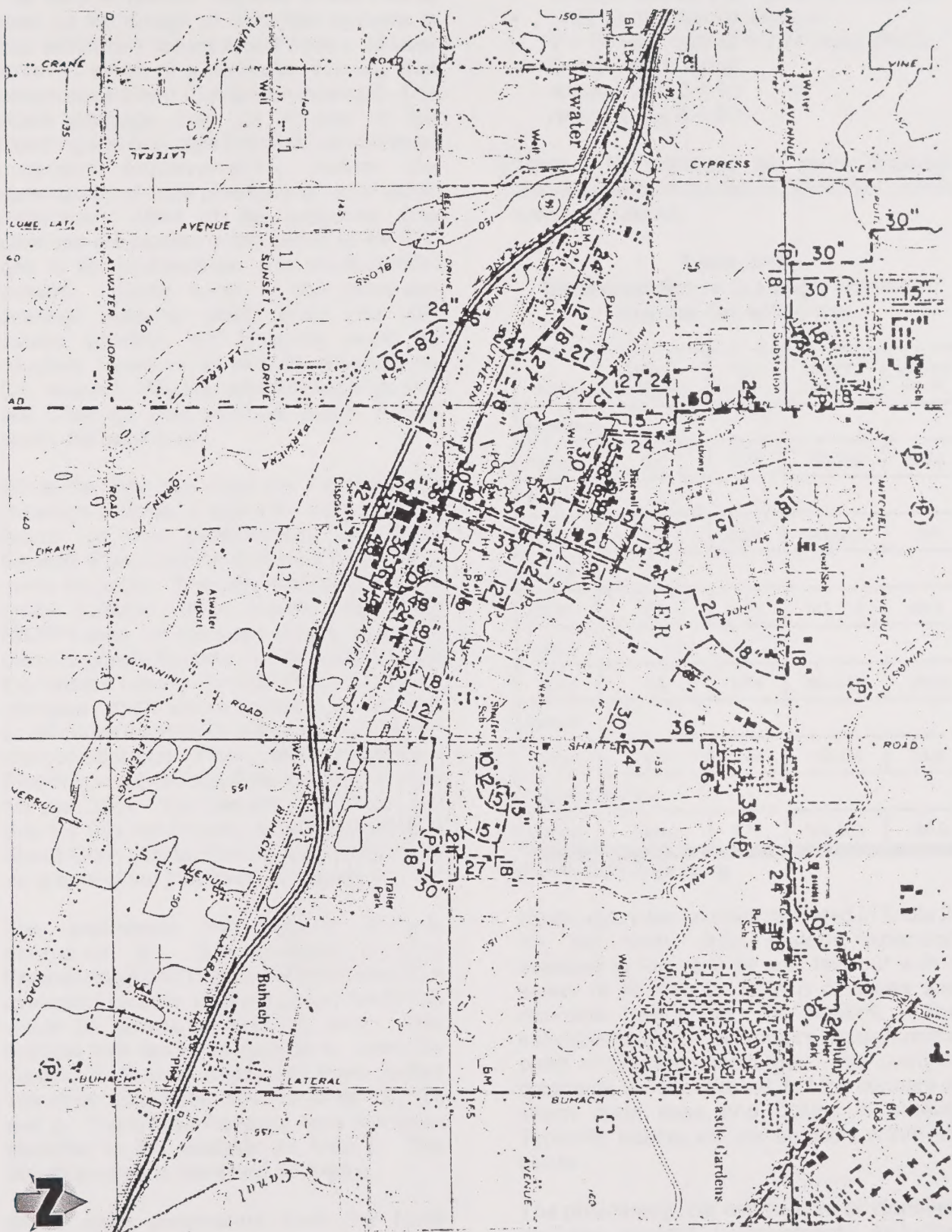


FIGURE 2-13
 MERCED COUNTY CRITICAL AREA FLOODING AND DRAINAGE PLAN
 ATWATER STUDY AREA

The level of service required in the Critical Area for the design of collection systems is that which can collect runoff from a 10-year storm (a storm of a particular intensity that occurs once every 10 years on average). The storm drainage map for Atwater in the Flooding and Drainage Plan indicated several proposed improvements, mainly the construction of more pipelines for storm water collection. Most of the proposed new pipelines are located in the center of the City and in its southeastern and southwestern corners. Since most of the proposed drainage systems would drain into MID canals, ponding, and pumping would be required. However, as discussed below, the City has not officially adopted the Flooding and Drainage Plan with the accompanying storm drainage map.

While the City has used the Flooding and Drainage Plan as a guide for infrastructure layout for new development, the 1992 General Plan deemed that plan deficient in some respects. The plan did not cover the entire Specific Urban Development Plan (SUDP) area for Atwater recognized as the ultimate growth boundary of the community in the Merced County General Plan. Land use changes which would increase runoff and could cause localized flooding were not taken into consideration. Finally, the timeline of the Flooding and Drainage Plan extended to only the year 2000. The General Plan concluded that the City would need to either develop a Storm Drain Master Plan or to participate in an update of the Flooding and Drainage Plan.

The preliminary infrastructure analysis prepared by Garcia-Davis-Ringler Engineering (GDR) for the 2000 General Plan evaluated volume of storm water runoff that would be generated and the storm drain facilities that would be needed to serve the Castle Fringe area which has been divided into three sub-areas referred to as 1A, 1B, and 2. The Castle Parkway area has been identified in the analysis as Area 3. The Westside area is identified as Area 4.

Storm drain parameters from the Nolte Report, which are still considered applicable, were used to estimate volumes and facility needs. These parameters include:

- Storage of a 50 year storm in the basin.
- VAR/12 formula for storage.
- V = 50 year rainfall = 2.74 inches/hour.
- Composite V factor:
Areas 1 and 2 = 0.7
Areas 3 and 4 = 0.6

Table 2-15 estimates the storm drainage volumes associated with the identified growth areas at buildout.

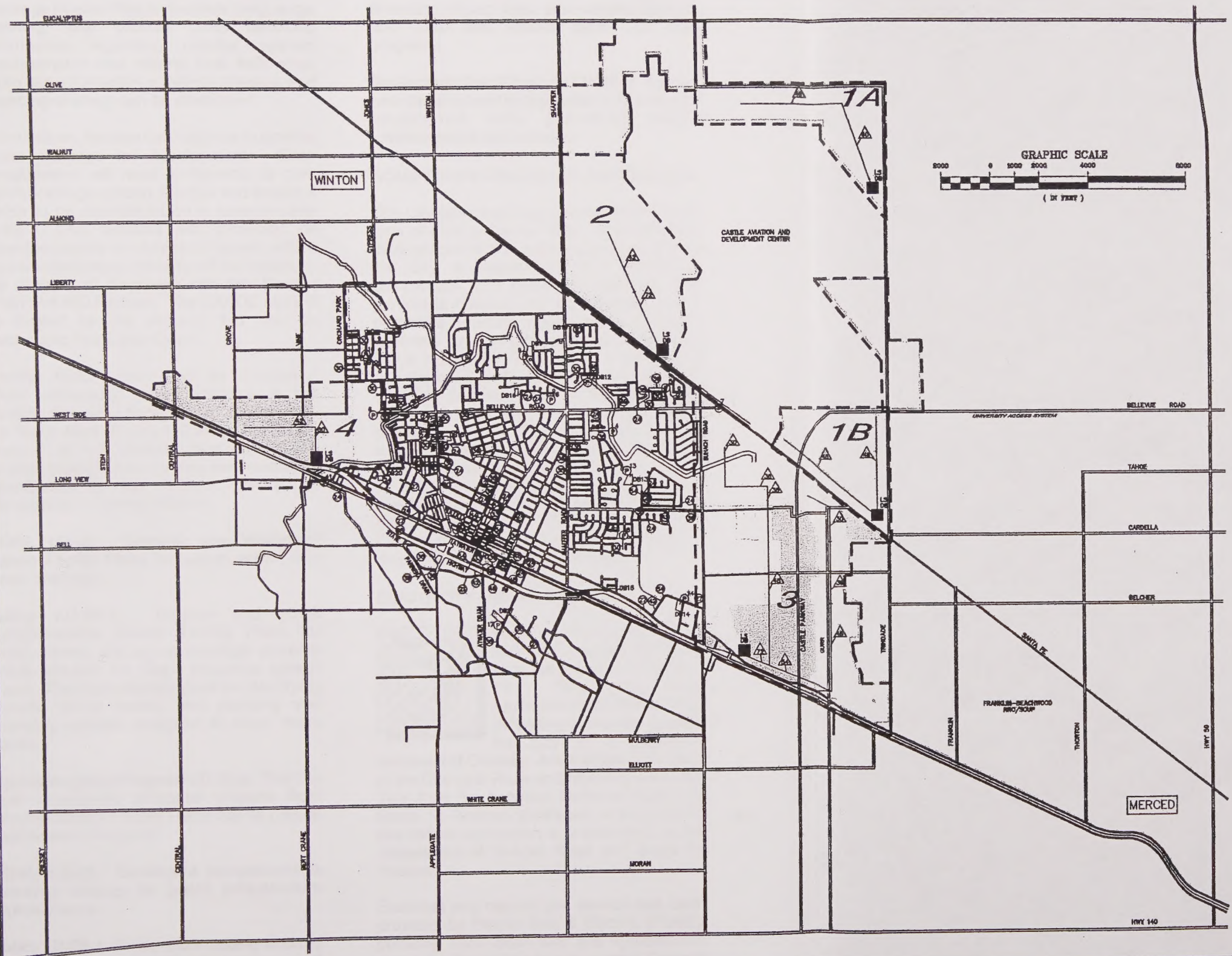
Table 2-15
Estimated Storm Drainage Volumes
Atwater Growth Areas

Acres	Drainage Coefficient	Rain In./Hr.	VAR/12 Cubic Yd.	VAR/12 Ac. Ft.
Area 1A				
750.0	0.7	2.74	193,398	120.0
Area 1B				
550.0	0.7	2.74	141,825	88.0
Area 2				
520.0	0.7	2.74	143,373	89.0
Area 3				
371.0	0.6	2.74	305,017	189.0
Area 4				
152.0	0.6	2.74	118,470	73.0
Total for All Areas				
3,752.0	Varies	2.74	902,083	559.0

Source: GDR Engineering

Based upon the volumes indicated in Table 2-15, the storm drain system expansion depicted in Figure 2-14 was laid out with a series of 48-inch to 72-inch pipelines and retention basins and lift stations. The individual systems will require storage and a point of positive discharge. The point of discharge is not indicated, but the concept of storm drain lines and basins is shown. Typically basins will be emptied within 48 hours.

The preliminary cost estimate for all identified drainage system improvements including those for the CAADC, and system operation and maintenance, is \$11,399,080 (1999 dollars).



LEGEND:

- Downtown Residential Transition (Mixed Use)
- Residential Transition
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Very Low Density Residential
- Manufacturing
- Business Park
- Commercial
- Commercial Transition
- Castle Aviation & Dev. Center
- Park
- Urban Reserve
- Urban Reserve / Business Park
- Path
- Institutional
- School

SYMBOLS:

- Proposed Drainage Basin and Lift Station
- Proposed Storm Drain line 30" or Greater Diameter - Shown in Inches
- Existing Detention Basin and Lift Station
- Existing Storm Drain Pump Station and Number
- Existing Storm Drain Line 24" or Greater Diameter - Shown in Inches

FIGURE 2-14
STORM DRAIN PLAN

Land Use, Public Facilities and Community Infrastructure Element

The City will need to prepare a Storm Drainage Master Plan to facilitate long range planning, and provide more definitive information regarding precise system improvements and refined cost estimates. From this information a system phasing and financing strategy can be developed.

In the interim, Atwater can continue to provide storm drainage for development. Each development will need to develop its own storm drainage system, the type and extent of which to be determined on a case-by-case basis. The systems will generally be retention basins or detention basins with a positive discharge. Atwater will be limited by the amount of discharge into the Atwater Drain and MID facilities. The CAADC site will be limited by the amount that can be discharged into Canal Creek.

Another factor which must be considered when addressing storm drainage is the location of various flood hazard zones within the Study Area. Figure 5-3 within the Safety Element of this General Plan depicts the location of flood hazard zones that have been established by the Federal Emergency Management Agency (FEMA).

GOAL LU-24. Develop and implement Master Facility Plans for sewer, water, and storm drainage.

Policy LU-24.1. Prepare and adopt comprehensive Master Facility Plans for water, sewer, and storm drainage systems which address the City's proposed growth areas. The plans should focus on identifying specific future needs, and planning and financing projects designed to meet these needs.

Implementation Program LU-24.a. The City shall incorporate proposed projects from adopted Master Facility Plans into its Capital Improvement Program.

GOAL LU-25. Develop a comprehensive financing strategy for public infrastructure improvements.

Policy LU-25.1. Prepare a financing strategy to accompany the City's Capital Improvement Program. Funding strategies may include,

but are not limited to, redevelopment financing, impact fees, assessment districts, and state and federal grant and loan programs.

Implementation Program LU-25.a. Require new development to pay its fair share of costs associated with providing public improvements and services.

SOLID WASTE COLLECTION AND DISPOSAL

The City generated approximately 23,570.87 tons of solid waste in 1990. Approximately 30.6 percent of the solid waste generated in the City is residential, 30.1 percent is commercial, 17.1 percent is self-haul, 15.2 percent is building and construction, and 7 percent is industrial. Solid waste in the City is collected by a private contractor, Browning Ferris Industries. The waste is transported and disposed in the Merced County Landfill, off State Highway 59. It was previously estimated that the landfill would reach capacity by 1995. The County has plans to expand the landfill by 200 acres, which would extend its useful life another 19 years. Efforts to reduce the amount of wastes which are diverted from the landfill are described in detail within the Open Space and Conservation Element under the topic of Source Reduction and Recycling.

ELECTRICITY AND NATURAL GAS



Major electrical transmission lines run through the Study Area, as depicted in Figure 2-15. One goes along Applegate Road/Winton Way, extending from a line south of the City to a substation northeast of Cressey. Another line runs south of the City near Rose and Mulberry Avenues. Two lines run between Bellevue Road and Santa Fe Avenue southeast of the CAADC site before converging at a substation at the intersection of Shaffer Road and Santa Fe Avenue.

Electrical and natural gas service has been provided by Pacific Gas & Electric (PG&E), primarily from fossil fuel and hydroelectric sources. According to the current General Plan, future supplies were anticipated to be

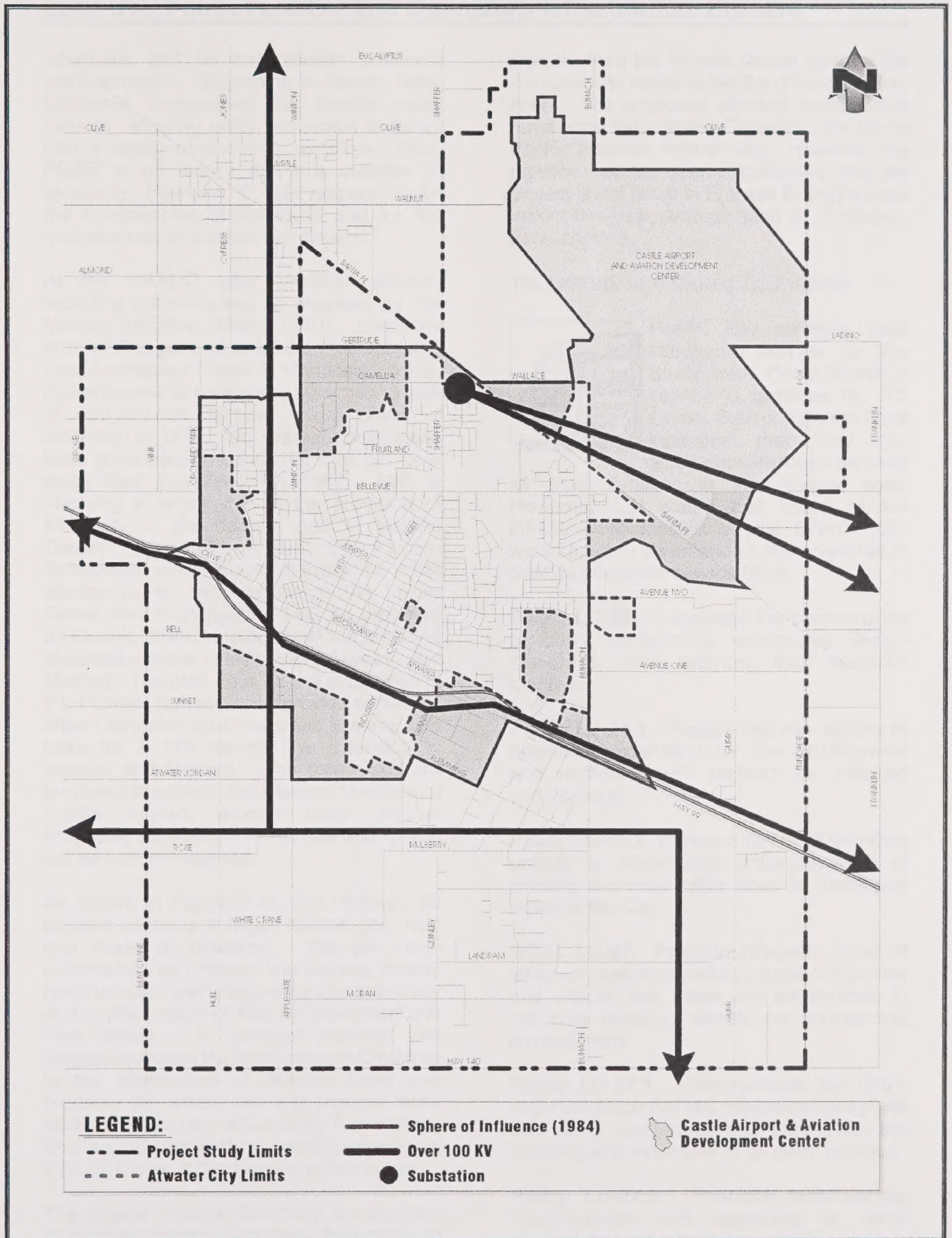


FIGURE 2-15
MAJOR ELECTRIC TRANSMISSION LINES AND SUBSTATIONS

Land Use, Public Facilities and Community Infrastructure Element

adequate, and no transmission problems were foreseen. Beginning in March 1998, California deregulated the electric utility industry, allowing utility customers to select from a variety of electricity suppliers. Thus, PG&E is no longer the sole supplier of electricity. However, it is still responsible for the transmission of electricity and for the maintenance of the delivery system.

At the CAADC site, electrical service, including maintenance, is provided by the Merced Irrigation District (MID). Electricity from MID is generated by the McSwain and New Exchequer Dams in Mariposa County. Powerhouses at both dams generated a total of 460,979,000 kilowatt hours (kwh) of electricity in 1997. On average, both dams have generated 332,992,155 kwh per year since their completion in 1967. MID is pursuing a larger role in the provision of electricity to the eastern part of Merced County. In 1996, it built the Pioneer Substation and began delivery of retail electric power with service to the Foster Farms plant in Livingston. MID has prepared an Electric Utility Development Plan to extend electrical service to Livingston, Atwater, and Merced. The plan calls for the expansion of the Pioneer Substation to provide service to other Livingston customers and to serve as a base for a 115 kilovolt line extension to Atwater and Merced. Line extensions are proposed to eastern and western Atwater and Castle Airport, among other places. Proposed substations in Atwater and Castle will be built as required.

As shown in Figure 2-16, the Highway 99 corridor contains a major natural gas main and crude oil pipelines. The gas main pipeline has an offshoot line running directly north through town, beginning approximately at the intersection of Atwater Boulevard and First Street. A "product pipeline" ran diagonally across the southwestern City limits to the intersection of Buhach Road and Highway 99, where two fuel storage tanks held jet fuel for use at Castle Air Force Base. The line subsequently ran north to the base. It is not known if this pipeline is still in use.

The Mojave Pipeline Company, a subsidiary of El Paso Energy Company, had plans to construct an extension of a natural gas

pipeline from the Mojave Desert through the San Joaquin Valley to the San Francisco Bay Area. The proposed pipeline route would have gone through the City within the Union Pacific Railroad right-of-way. However, the pipeline has not been constructed, and the project is not listed in El Paso Energy's most recent five-year strategic plan (L. Simmons, pers. comm.).

TELEPHONE AND CABLE TELEVISION



Pacific Bell provides local telephone service to the Study Area. Cable television service is provided by TCI Cable. Both companies have indicated that they can accommodate future demand

for their services in the Atwater area. However, TCI stated that cable service infrastructure located on the CAADC site would have to be extended and upgraded to provide adequate service there.

GOAL LU-26. Encourage the conformance of utility systems to community design standards while retaining their essential functions.

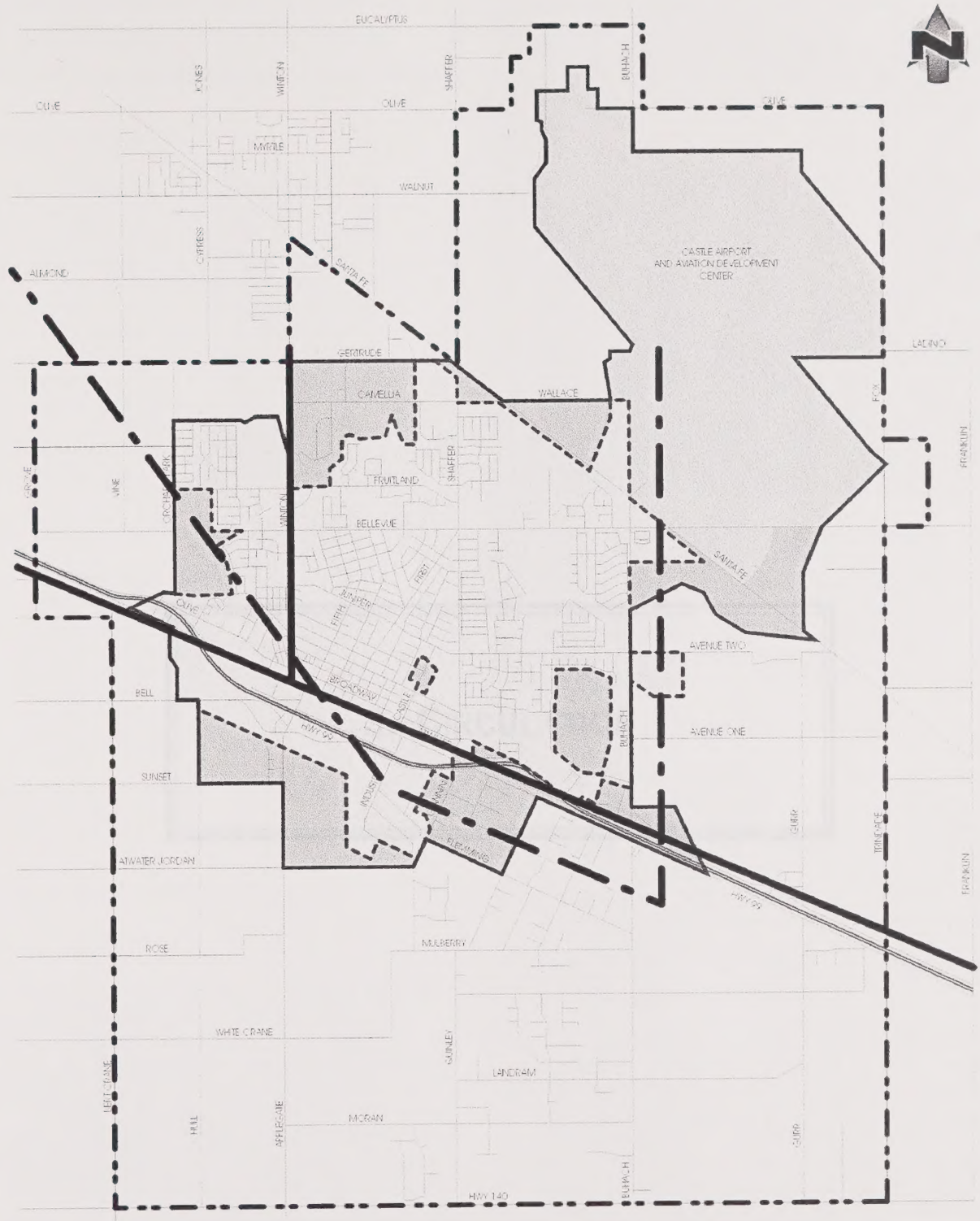
Policy LU-26.1. Require that new utilities or necessary extensions for new development and redevelopment projects be installed underground.

Policy LU-26.2. Pursue a variety of financing options to accomplish undergrounding of existing overhead utility lines in developed areas of the City.

GOAL LU-27. Promote adequate levels of utility services provided by private companies and ensure that these are constructed to minimize negative effects on surrounding development.

Policy LU-27.1. Communicate the City's major development and redevelopment plans with utility companies and coordinate the planning and extension of all utility facilities

Policy LU-27.2. Promote technological improvements and upgrading of utility services throughout the community.



LEGEND:

- -- Project Study Limits
- - - - Atwater City Limits

- Sphere of Influence (1984)
- Product Pipeline (C.A.F.B.)
- • • • Natural Gas Main Lines

 **Castle Airport & Aviation Development Center**

CIRCULATION ELEMENT

INTRODUCTION

This Element of the General Plan outlines the vision, goals, and actions for the city's transportation system. The City of Chester is a growing community with a diverse population and a strong economy. As the city continues to grow, it is essential to have a transportation system that is safe, efficient, and sustainable. This Element provides a framework for the city's transportation planning and implementation efforts.

The goals of this Element are to:

1. Provide a safe and efficient transportation system for all users.
2. Promote sustainable transportation options.
3. Support economic development and job growth.
4. Enhance the quality of life for residents.
5. Reduce greenhouse gas emissions.
6. Improve the city's image and reputation.

Existing transportation issues in the city include:

• Traffic congestion

• Limited transit options

The City of Chester is committed to addressing these issues and implementing the goals of this Element. The City will work with the community, state, and federal agencies to develop and implement a comprehensive transportation plan.

The City will also work to improve the city's infrastructure, including roads, bridges, and public transit. The City will continue to monitor and evaluate the progress of its transportation efforts and make adjustments as needed.

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3. CIRCULATION

CIRCULATION ELEMENT

INTRODUCTION

This Element of the General Plan describes the various means by which residents, businesses, and visitors in Atwater travel through the City. The most common means of transportation is the automobile (and trucks for business and industry). However, this Element deals with transportation in all its forms, including bicycles, walking, trains, and airplanes. The intent is to provide an overview of all the means of transport, and to show how these different methods can complement each other to make Atwater's circulation system work more efficiently.

The topics addressed in this Element are:

- Streets and Highways
- Goods Movement
- Parking
- Transit Service and Facilities
- Railroad Service
- Airports
- Bicycle Routes
- Pedestrian Facilities

Existing and future conditions, as well as goals and policies for each topic, are addressed individually in each section.

STREETS AND HIGHWAYS

Regional Setting



Figure 3-1, on the following page, shows the City of Atwater's relationship to the State highway system, nearby counties and major cities. Figure 3-2 shows the existing street system as of 1998; this map generally shows roads of Citywide significance. The City's highway network consists of State Route (SR) 99. Prominent City roadways include: Atwater Boulevard, Bellevue Road, Winton Way, Applegate Road, Buhach Road, Broadway, Shaffer Road, First Street, and Third Street. Outside the City limits, State Highway 140 forms the southern boundary of the Study Area, and State Highway 59 forms part of the Study Area's eastern boundary. Santa Fe Drive, a northwest-southeast route

between Merced and Winton, passes through the northeast portion of the City by the CAADC site. The roadway serves as a major access route to the former Castle Air Force Base for workers living in the Merced area.



The City is linked to Merced and Sacramento principally by SR 99. This route provides the only continuous northwesterly-southeasterly route through the City and is heavily used for regional travel. SR 99 is constructed to freeway standards. Approximately two miles of SR 99 are located within the City limits.

Functional Classification System

"Functional classification" is the process by which streets and highways are grouped into classes, or systems, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and highways do not serve travel independently, but are instead parts of a larger network of roads which combine to serve the community's travel needs.

This section defines roadway classification systems currently used by the Federal Highway Administration (FHWA), the City, and local agencies. Since issues related to the classification of roadways range from funding to operational considerations, each agency has its own classification system. This section defines and clarifies the role of each system, and presents the classification system used for this Element of the General Plan.

It is necessary to determine how travel can be channelized along the street and highway system in a logical and efficient manner. Functional classifications define the channelization process by defining the area



ATWATER WITHIN THE MERCED COUNTY REGION

Legend

- State Route
- Arterial & Collectors

Circulation Element

that a particular street or highway should service through a circulation network. Definitions of the roadway classifications used in this General Plan begin on this page.

Federal Functional Classifications

Federal functional classifications for rural and urban areas, are shown below. Classifications which are applicable to Atwater are described in the next section.

Rural

Interstate and Other
Principal Arterial
Minor Arterials
Major Collectors
Minor Collectors

Urban

Interstate and Other
Freeways and Expressways
Other Principal Arterials
Minor Arterials
Collectors

Roadway Classifications Used in This Element

To identify roadway infrastructure needs for the City to Year 2020 and beyond, several broad roadway classifications have been identified. The roadway classifications used in this document are consistent with functional classifications as defined by the Federal Highways Administration (FHWA) and California Department of Transportation (Caltrans).

- *Freeways.* A freeway is a divided, limited access highway (access is provided at grade separated interchanges and vehicular crossing of these facilities is provided at grade separations). Freeways are designed to carry large volumes of traffic traveling long distances, although localized use of freeways in urban areas is considerable.

Caltrans designs and constructs all freeways to state design standards, and to federal standards if federal monies are being used to fund or partially fund the facility. Alignments and key design details such as interchange locations are determined in consultation with local and federal authorities when involved. Nothing actually precludes local jurisdictions from building their own freeways. However, Caltrans' State

Highway System contains virtually all candidate routes for freeways. The high cost of freeways has historically made it impractical for any agency other than Caltrans to construct new freeways.

- *Expressways.* These roads carry traffic for relatively long distances (3 miles or longer) and provide direct access to the freeway system. Access from driveways and minor side streets is restricted. Major cross street intersections are signalized. Major intersection spacing is envisioned at ½ mile intervals or more.
- *Major Urban Arterials.* These are roads within the Sphere of Influence that carry large volumes of traffic relatively long distances within or through an urban area. They also serve considerable local traffic traveling short distances. Along these roadways, priority is placed on through traffic mobility rather than access to fronting property, and direct access to individual fronting parcels is discouraged. A major arterial with fully controlled frontage access is also considered an expressway. Major urban arterials should be continuous through the urban community they serve and link to arterial routes in adjacent communities or the rural areas.
- *Other Urban Arterials.* These are roads within the Sphere of Influence that carry moderately high volumes of long distance and local traffic. Although access to abutting property is permitted, priority is given to through traffic mobility.
- *Urban Collectors.* These are roads within the Sphere of Influence intended to carry local traffic between the local street system and the arterial highway system. In urban areas collectors may serve average daily volumes in excess of 10,000 although volumes are normally less.
- *Urban Local Roads.* These roads provide access to abutting property and link properties to the collector system.
- *Rural Local Roads.* These roads provide access to property and activity nodes in sparsely settled areas of the City. All City roads not shown on the Circulation Element Map are considered standard local roads.

The intent of the functional classification system used here is to describe the intensity and character of traffic using each type of facility, the character of abutting uses, the priority placed on access to abutting property versus through traffic mobility, and roadway right-of-way standards. The City maintains standards for each of these roadway types which define the width of the right of way, width of pavement, sidewalk widths and locations, etc.

The intent of the Federal Functional Classification System is to identify what types of federal Transportation Equity Act for the 21st Century (TEA-21) funding each type of facility is eligible to receive.

Existing Capacity Analysis

The first step toward development of a functional street and highway system is to thoroughly assess existing traffic conditions. To accomplish this task, existing segment level of service (LOS) analysis was conducted. LOS standards are used by City of Atwater, Caltrans, and local agencies to measure the street and highway system's performance. To determine the type and number of transportation projects that may be necessary to accommodate Atwater's expected growth, freeway, expressway, arterial, and collector facility LOS was assessed.

The General Plan Guidelines provides this definition, in part:

"According to the Transportation Research Board's 1985 Highway Capacity Manual Special Report 209, level-of-service is a qualitative measure describing the efficiency of a traffic stream. It also describes the way such conditions are perceived by persons traveling in a traffic stream. Levels-of-service measurements describe variables such as speed and travel time, freedom to maneuver, traffic interruptions, traveler comfort and convenience, and safety."

Levels of service range from the best (rated as LOS A) to the worst (rated as LOS F). LOS A represents free flow and excellent comfort for the motorist, while LOS F represents the situation in which highway capacity is exceeded. The various levels of

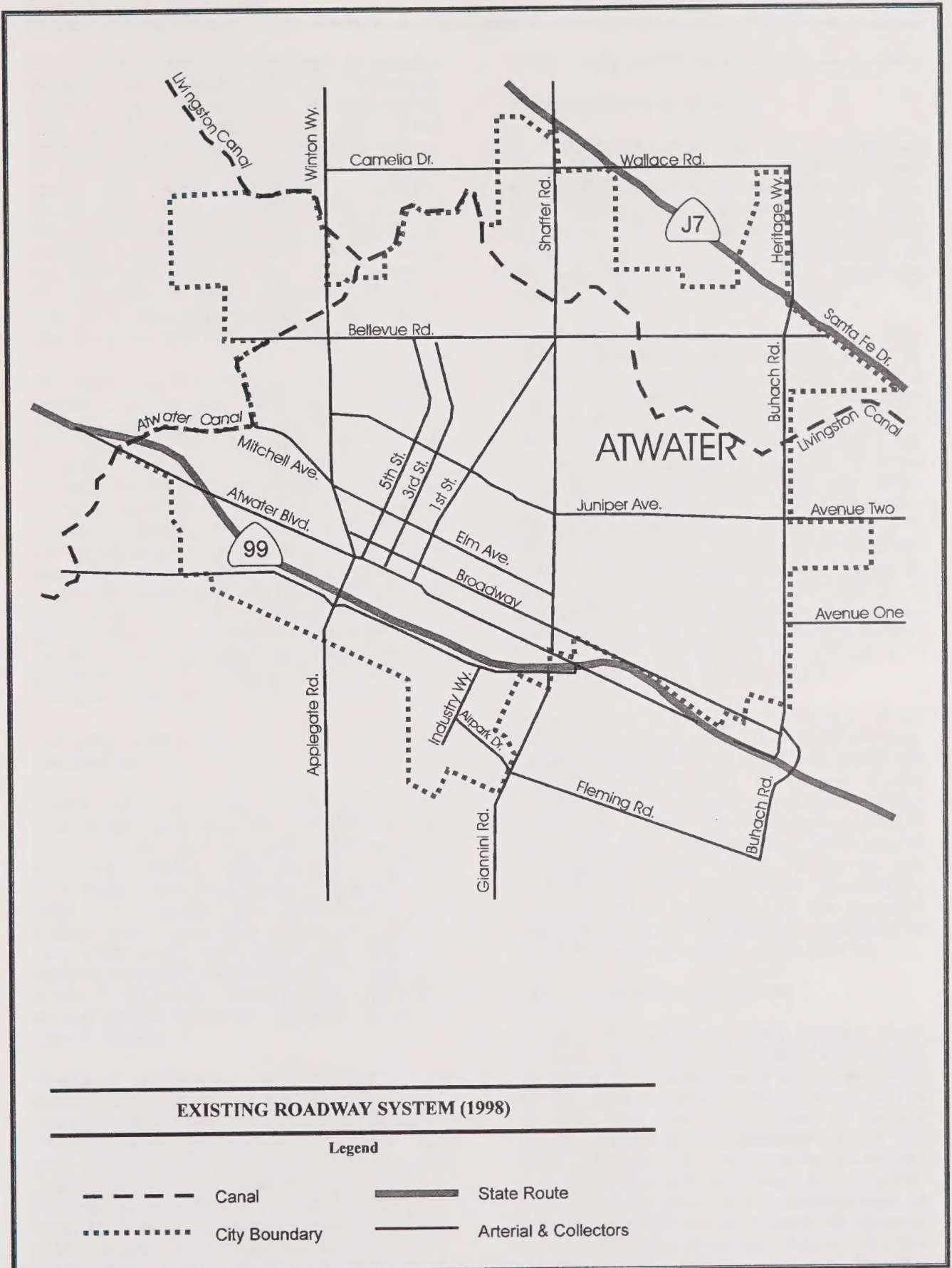
service, as used in this General Plan, are summarized below. (For a more technical description, please refer to the General Plan Environmental Impact Report).

LOS	Description
A	Represents "free flow," in which individual vehicles are not affected by others on the roadway and do not need to wait for other traffic to move along a roadway or through an intersection.
B	Other vehicles on the roadway begin to affect each other. Vehicles can travel at the speed they wish, but cannot always maneuver as they wish because of the presence of other vehicles.
C	The operation of individual vehicles begins to be significantly affected by other vehicles on the roadway.
D	Speed and freedom to maneuver are severely restricted; the roadway is becoming crowded.
E	The roadway is operating at near its maximum capacity; vehicles move at low speeds.
F	At this level, traffic is "stop-and-go" or "gridlock." Generally, the number of vehicles attempting to use the roadway exceeds the number that can be accommodated, and traffic flow breaks down.

According to the 1997 Highway Capacity Manual (HCM), LOS is categorized by two types of traffic flow: "uninterrupted" and "interrupted".

Uninterrupted flow facilities do not have fixed elements such as traffic signals that cause interruptions in traffic flow. An example of such a roadway is SR 99.

Interrupted flow facilities have fixed elements that cause an interruption in the flow of traffic, such as stop signs and signalized intersections. Examples of such roadways in Atwater include Winton Way and Bellevue Road, and other arterial and collector streets. Specific standards for LOS on "uninterrupted flow" and "interrupted flow" roadways are defined in the General Plan Environmental Impact Report.



An important goal is to maintain acceptable levels of service along the City's highways, streets, and roads network. To accomplish this, the City, Caltrans, and other local agencies adopt minimum levels of service in an attempt to control congestion that may result as new development occurs. According to goals, objectives, and policies described in this Element, the City's goal is to maintain acceptable levels of service along the highways, streets, and roads network. For purposes of this analysis, a minimum LOS of D was assumed along the City of Atwater street and highway system.

To determine the existing LOS for each segment along the street and highway network, segment LOS was estimated using the Modified HCM-Based LOS Tables ("Florida Tables"). The Florida Tables consider the capacity of individual street and highway segments based on numerous roadway variables: design speed, signalized intersections per mile, number of lanes, and saturation flow. These variables were identified and applied to reflect existing traffic LOS conditions in the General Plan Study area. A complete description of the Modified Tables and the variables applied to calculate segment LOS is included in the General Plan Environmental Impact Report.

Existing Traffic Counts and Roadway Geometrics

Traffic volumes used to develop LOS calculations were obtained from MCAG and the City of Atwater, and various local agencies. Traffic volumes were available from these agencies for years 1990 through 1998. To reflect 1998 traffic along the existing street and highway system in the City, traffic counts from years other than 1998 were adjusted by three percent (3%) per year, a rate of increase consistent with historical annual growth rates for vehicle trips in the City of Atwater.

Roadway geometrics were obtained from information provided in the 1998 Regional Transportation Plan (RTP), from the Merced County Association of Governments (MCAG) and City staff, and from a field review conducted by Valley Research and Planning Technologies (VRPA). These geometrics were applied to establish existing segment LOS. Figure 3-3 shows the existing traffic counts for segments of the City's street and highway system. Figure 3-4 shows the Level of Service which currently results from these

traffic levels on the Atwater roadway system.

Existing Level of Service

A street and highway segment is defined as: "a stretch of roadway often located between signalized or controlled intersections." The HCM-Based LOS analysis is based on a calculation of the Average Annual Daily Traffic (AADT) and other variables, such as the number of lanes and signalized intersections along a street segment.

Results of the segment analysis show that street and highway segments within the City of Atwater are currently operating at LOS A through F. One segment, SR 99 between Buhach and Shaffer, is operating at LOS F. Thus, this highway segment falls short of City of Atwater's, Caltrans', and other affected local agencies' minimum LOS standards. Maximum AADT volumes in the City occur along this segment with approximately 63,276 vehicle trips per day. The identification of this deficient segment provides an opportunity for City of Atwater, MCAG, Caltrans, and other affected local agencies to focus on street and highway and other improvement projects that will improve over time the LOS on that segment and in the City as a whole.

Severe prolonged congestion, LOS E, is not encountered along any other roadway segments, as indicated on Figure 3-4. Moderate traffic congestion (LOS D) occurs at one location, Atwater Boulevard between Winton and Shaffer. Based upon this assessment, it can be further assumed that intersections located along the street segments are operating at LOS D or better. In addition, freeway ramps connecting to the deficient segment along SR 99 are likely operating at deficient levels of service (LOS E or F).

Future Roadway Conditions

Figure 3-5 shows projected average daily traffic volumes for the Year 2020 on principal roadways in Atwater, based on development of the City according to the policies of this General Plan. Resulting Level of Service (LOS), assuming the development of the City's ultimate roadway system (described later in this Element) are shown in Figure 3-6. (Note: Further detail on the development of these projections can be found in the General Plan Environmental Impact Report and the detailed traffic analysis prepared for that document.)

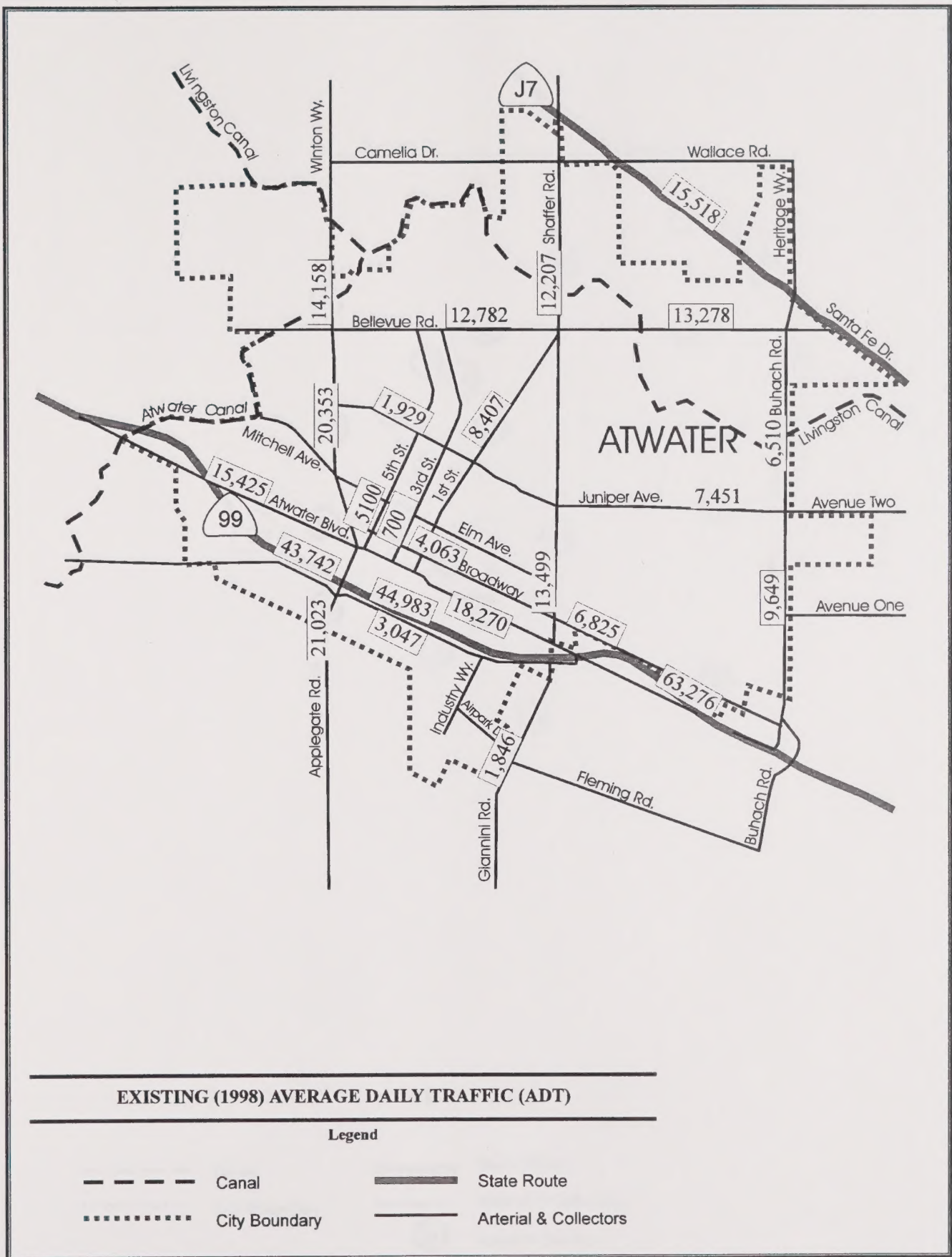
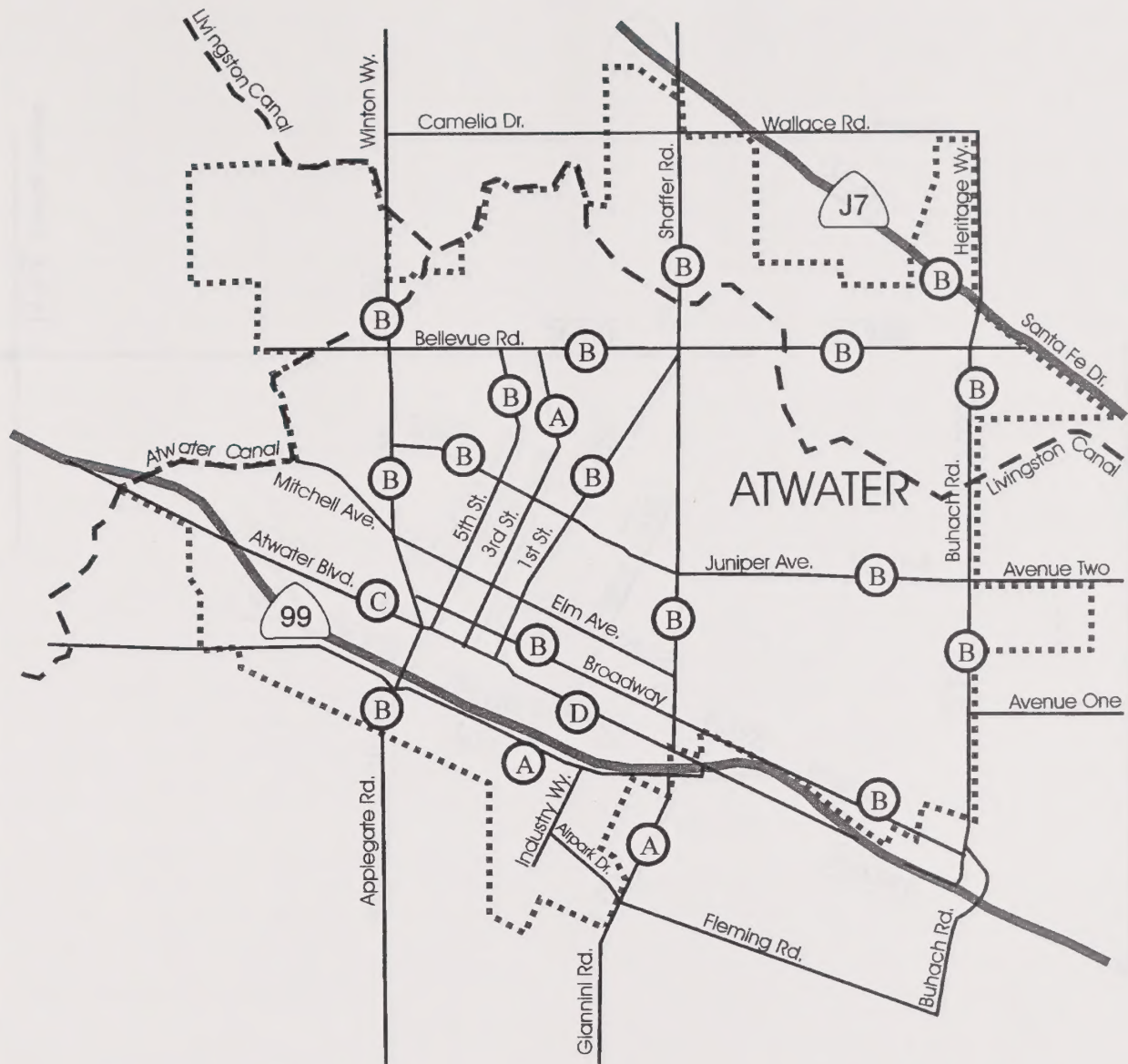


FIGURE 3-3
EXISTING (1998) AVERAGE DAILY TRAFFIC (ADT)

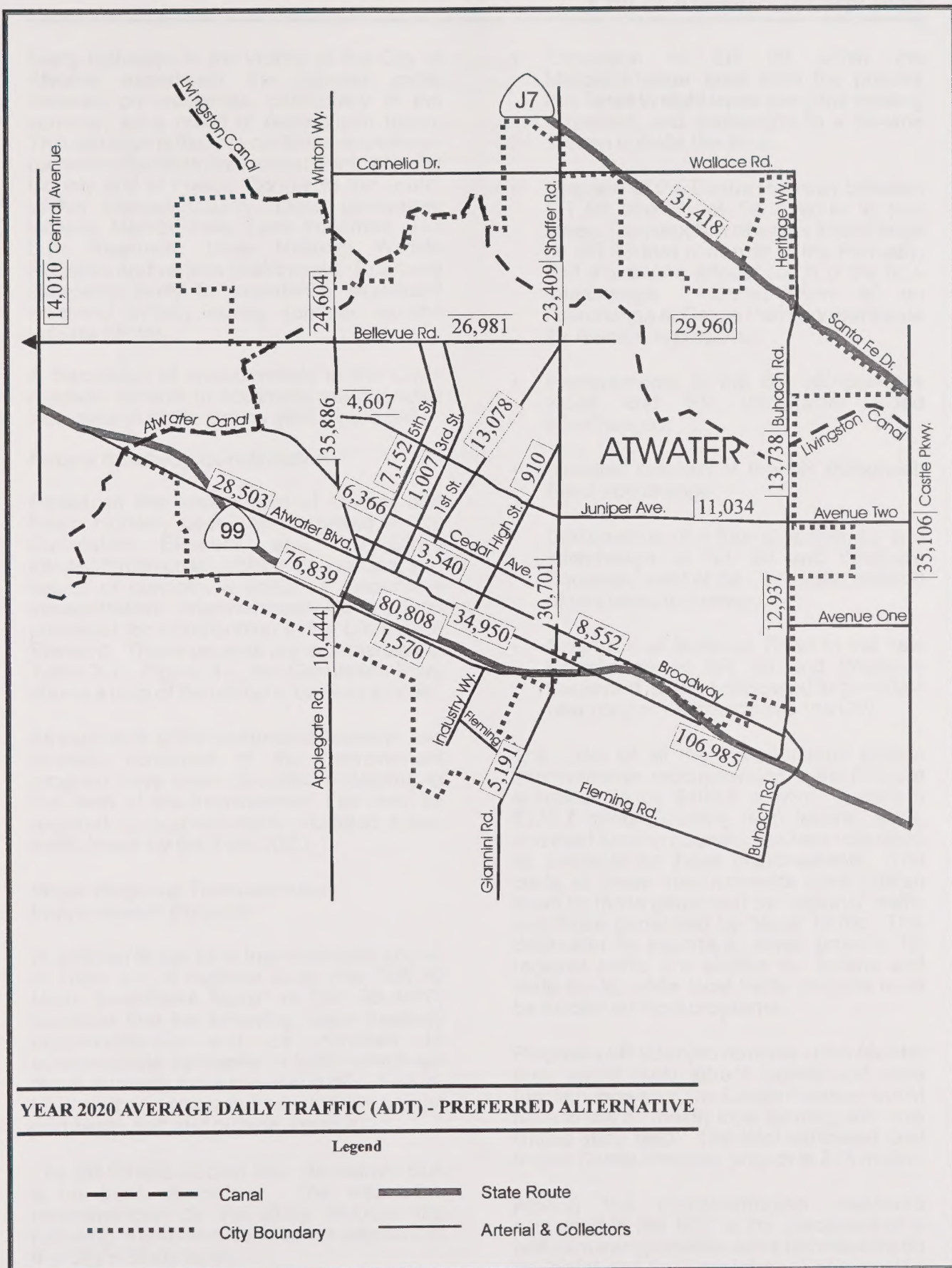


EXISTING (1998) LEVEL OF SERVICE (LOS)

Legend

- | | | | |
|-------|---------------|-----|-----------------------|
| --- | Canal | — | State Route |
| | City Boundary | — | Arterial & Collectors |
| | | (B) | Level of Service |

FIGURE 3-4
EXISTING LEVEL OF SERVICE (LOS)



Many highways in the vicinity of the City of Atwater experience the highest traffic volumes on weekends, particularly in the summer, as a result of recreational travel. This situation is likely to continue since minor recreation facilities are located within Merced County and in Fresno County to the south. Within Merced County, these generators include: Merced Falls, Lake Yosemite, San Luis Reservoir, three National Wildlife Refuges, and various public parks. Roadway segments likely to experience significant weekend activity during summer months include SR 99.

A discussion of improvements to the City's roadway network to accommodate projected increases in traffic begins after Figure 3-6.

Future Roadway Construction

Based on the assessment of current and future highway needs as discussed in this Circulation Element, and the City's transportation goals, objectives, policies, and issues of concern, a series of responsive transportation improvements have been proposed for incorporation in the Circulation Element. These projects are summarized in Table 3-1. Figure 3-7, the Circulation Plan, shows a map of the ultimate roadway system.

All segments of the designated freeways and arterials contained in the improvement program have been classified according to the level of the improvement that may be required to accommodate projected future traffic levels by the Year 2020.

Major Regional Transportation Improvement Projects

In addition to the local improvements shown in Table 3-1, a regional study (the "SR 99 Major Investment Study" or "SR 99 MIS") identified that the following major roadway improvements will be needed to accommodate increases in traffic which will result primarily from regional traffic (that is, trips on these roadways which for the most part begin and end outside Atwater).

The SR 99 MIS studied four alternatives plus a no build alternative. The alternative recommended by the study includes the following improvements within or adjacent to the City's Study area:

- Expansion of SR 99 within the Merced/Atwater area from the present four lanes to eight lanes along the existing alignment, and connection to a six-lane system outside the area.
- Upgrade of the Castle Parkway between SR 99 and Santa Fe Avenue to four lanes. Construction of a new interchange on SR 99 that connects to the Parkway, and a two-lane arterial south of the new interchange. Construction of an interchange at Castle Parkway and Santa Fe Avenue is proposed.
- Improvements to the SR 99/Applegate Road and SR 99/Shaffer Road interchanges.
- Eventual removal of the SR 99/Buhach Road interchange.
- Construction of a four-lane freeway and interchange at SR 99 and Westside Boulevard west of the City. Later addition of two lanes to freeway.
- Extension of Bellevue Road to the new interchange at SR 99 and Westside Boulevard is also anticipated to provide a new northern entrance into the City.

The costs of all the transportation system improvements recommended in the MIS are estimated to be \$403.6 million. A total of \$139.7 million, coming from federal, state, and local funding sources, has been identified as available for these improvements. The costs of these improvements were broken down by those generated by "regional" traffic and those generated by "local" traffic. This distinction is important, since projects for regional traffic are eligible for federal and state funds, while local traffic projects must be funded by local programs.

Proposed SR 99 improvements in the Atwater area would likely attract federal and state funding. However, the Castle Parkway would have to rely on mostly local funding, with only limited state help. The total estimated cost for the Castle Parkway project is \$13 million.

Among the implementation measures contained in the MIS is the placement of a half-cent transportation sales tax measure on the ballot and the development of a county-wide impact fee system. These measures are considered to provide the most equitable

**Table 3-1
Recommended Roadway Improvements**

Roadway	Limits	Improvements	LOS
SR 99	Buhach to Shaffer	Increase to 8 lanes	LOS D
SR 99	Shaffer to Winton	Increase to 6 lanes	LOS D
SR 99	Winton to NW City Limits	Increase to 6 lanes	LOS D
Atwater Boulevard	Wedel to Winton	Increase to 4 ¹ lanes	LOS B
Atwater Boulevard	Winton to Shaffer	Increase to 4 ¹ lanes	LOS B

¹ While additional right-of-way will not be feasible to accommodate the necessary widening of Atwater Boulevard, several alternatives should be explored that would provide existing right-of-way for additional travel lanes within the two segments affected by LOS deficiencies including:

- Removal of on-street parking resulting in minor restriping of the existing facility to accommodate additional lanes in both directions;
- Reconfiguration of existing intersections through the use of raised medians, etc.; and
- Traffic Systems Management (TSM) strategies (at major intersections that would enhance traffic flow without requiring additional right-of-way).

means of funding the local share of projects. In addition to the commercial and business park uses proposed west of the City, this General Plan introduces additional areas of commercial and business park land uses just east of Atwater's City limits. Castle Parkway is classified as an expressway between Santa Fe Drive and SR 99. Therefore, access will be limited in accordance with this functional classification. Trips generated by the new land uses adjacent to Castle Parkway will be serviced by Parkway frontage roads and will ultimately access the Parkway via the primary east-west corridors in the area.

The MIS Report is the most recent document that has been produced, which provides an overview of anticipated regional projects including those associated with development of the University Access System. Development of these improvements will be pursued by the City of Atwater. The City will also continue to coordinate with Caltrans and MCAG as future plans are developed or refined. The City's Circulation Element may also be augmented or modified as necessary on a periodic basis to incorporate improvements that are identified in future studies and plans that are adopted on a regional basis.

Streets and Highways Goals and Policies

The following Goal and Policies are related to the development of the City's ultimate roadway system.

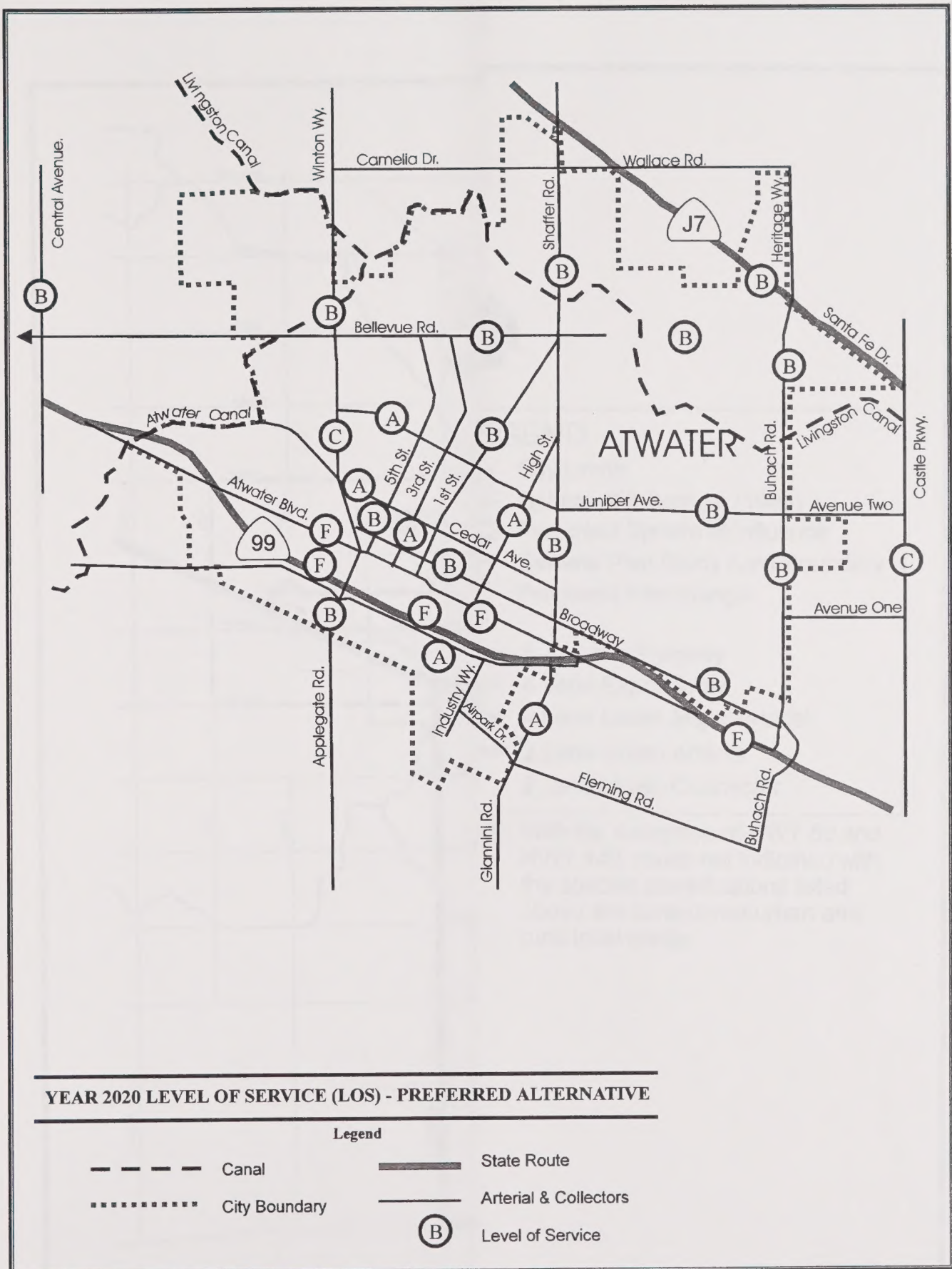
GOAL CIRC-1. Maintain adopted Level of Service (LOS) for City streets and intersections.

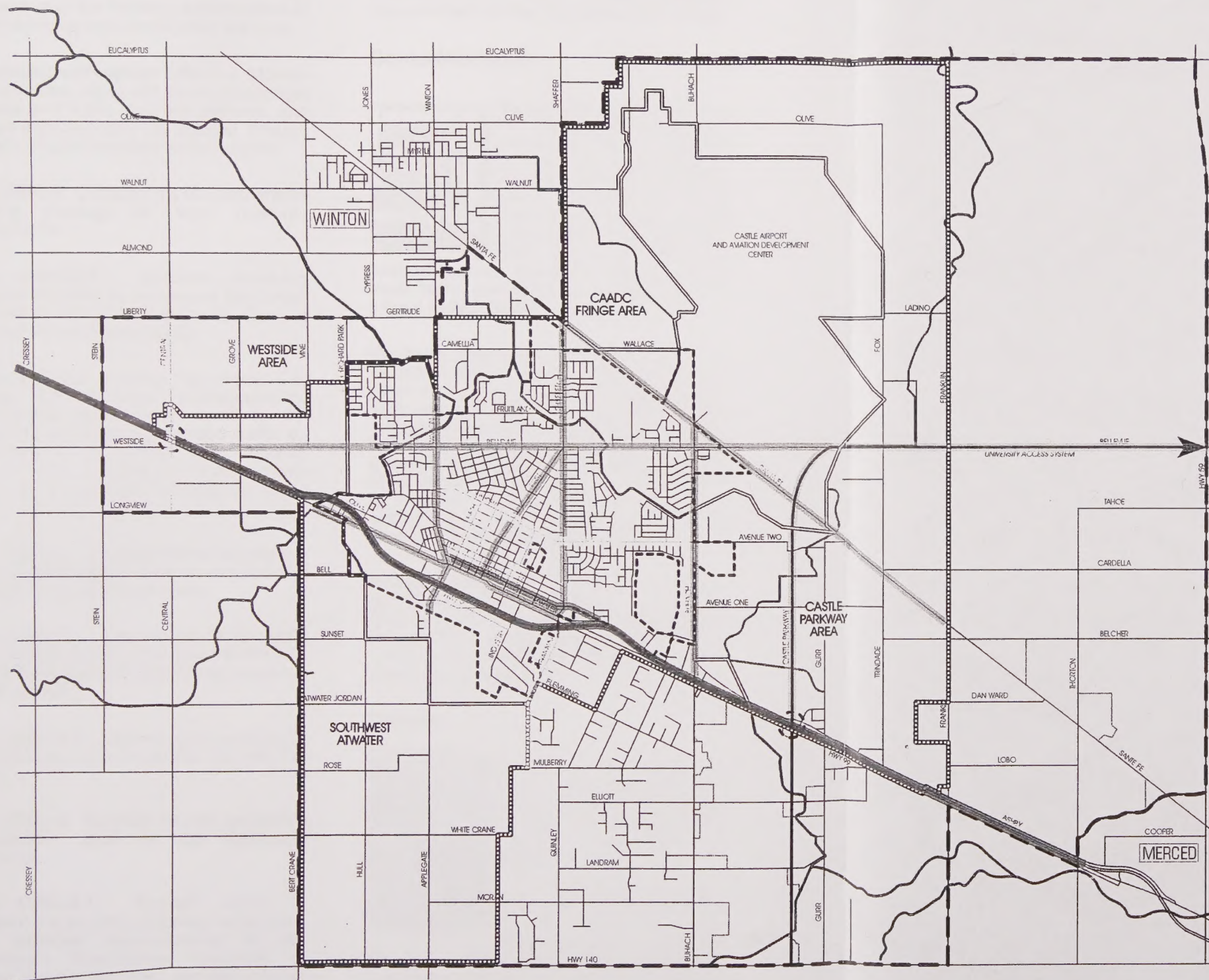
Policy CIRC-1.1 Establish and maintain a minimum LOS of D for all arterial and collector streets within the City.

Policy CIRC-1.2. Establish intersection LOS standards when more specific intersection traffic data becomes available.

Policy CIRC-1.3. Design roadway improvements and evaluate development projects using established LOS standards.

Policy CIRC-1.4 Develop the City's roadway system in conformance with the planned roadway system shown on the Circulation Plan (Figure 3-7) and the City's adopted cross section standards.





LEGEND

- City Limits
- Sphere of Influence (1984)
- ▭ Proposed Sphere of Influence
- - - General Plan Study Area Boundary
- ⊕ Proposed Interchange
- ▬ 6 - 8 Lane Freeway
- ▬ 4 Lane Expressway
- ▬ 4 Lane Urban Major Arterial
- ▬ 2 Lane Urban Arterial
- ▬ 2 Lane Urban Connector

NOTE: With the exception of HWY 59 and HWY 140, roads not indicated with the specific classifications listed above are considered urban and rural local roads.

Policy CIRC-1.5 Access for land uses adjacent to Castle Parkway will be provided by frontage roads which parallel the Parkway. Direct access to the Parkway will be limited to the primary east-west corridors in the area.

Implementation Program CIRC-1.a. Monitor levels of service, along with physical condition of streets and traffic accident patterns, and program improvements as needed through the City's Capital Improvements Program.

GOAL CIRC-2 Creation of a comprehensive financing strategy for local roadway improvements.

Policy CIRC-2.1 Consider financing strategies required to implement the "local" traffic portion of the Merced/Atwater Corridor Major Investment Study (MIS).

Policy CIRC-2.2 Provide "fair share" City funding for regional transportation improvements at a level equal to the contribution of Atwater-generated traffic on the roadway or intersection. Seek regional, state, or other funding for improvements whose need is generated by traffic originating outside Atwater.

GOAL CIRC-3 Support efforts to improve vehicular connections between Atwater and the UC Merced access system.

Policy CIRC-3.1 Support efforts to obtain funding for the projects proposed in the MIS and any subsequent documents approved on a regional basis.

Policy CIRC-3-2 Explore improvements to other roadways connecting the City with UC Merced.

GOAL CIRC-4 Creation of new entrances into Atwater north of the Applegate interchange.

Policy CIRC-4.1 Support efforts to implement the projects proposed in the MIS, which includes improvements to the 99/Applegate interchange, extension of Bellevue Road to the west, and the creation of a new interchange at SR 99/Westside Boulevard.

Policy CIRC-4.2 Support the implementation of the Atwater Redevelopment Agency's Implementation Plan, which includes improvements to the Applegate interchange.

GOODS MOVEMENT



"Goods Movement" refers to the shipping by truck of raw materials and finished products for commercial and industrial uses. In Atwater, goods movement occurs primarily in connection with agricultural and industrial uses. Since agriculture is a relatively mature industry in the City, overall truck traffic generated by agricultural uses should remain stable in the future.

However, relocation and replacement of individual agricultural processing plants and other new industries can significantly alter both regional and localized patterns and concentrations of truck traffic within the City's Sphere of Influence. As healthy industrial growth is expected within the City, the scale of industrial-related truck traffic will continue to increase. According to the 1998 RTP, approximately 20-30 percent of all traffic along SR 99 is comprised of trucks.

Because the use of roadways by trucks is part of the overall roadway system's use, no specific goals or policies for this issue are included here. Implementation of Goal CIRC-1 and its related policies will address future goods movement needs.

PARKING



When vehicles are driven, they must eventually be parked, whether for storage, security, or while visiting stores, businesses, or residences.

While parking shortages can be an issue in some communities, negatively affecting businesses or making residential areas less desirable, this issue has not been identified as a concern in Atwater. In general, sufficient parking is available for most of the City's residential areas and businesses. Any

parking issues which are identified in the Downtown area will be addressed in the Specific Plan that is being prepared for that area.

GOAL CIRC-5 Provide sufficient parking for all commercial, industrial, residential, and other uses, either off-street or on-street as appropriate.

Policy CIRC-5.1 Require that all new development provides sufficient on- or off-street parking to meet the standards of the City's Zoning Code or any other applicable planning document (such as the Downtown Specific Plan).

TRANSIT SERVICES AND FACILITIES



The City of Atwater is a part of the public transit system called Merced County Transit, also known as The Bus. The Bus is Merced County's only countywide provider of public transit service. The Bus provides

basic public transportation service to 17 cities and communities in Merced County, including Atwater. Figure 3-8 illustrates the existing bus routes in Atwater. Two bus routes serve the City. One route goes from Santa Fe Drive to the downtown along Broadway Avenue before turning north on Winton Way. The other route also starts from Santa Fe Drive, then runs along Bellevue Road before reaching Winton Way. Both routes stop in Merced and Winton, and one route continues on to Livingston. Connections can be made to other Merced County communities.

The City also provides a dial-a-ride paratransit service. Greyhound Bus Lines provides bus service from Atwater to state and national destinations to the north and south. There is no terminal in the City; the nearest one is in Merced. A "flag" stop does exist in the City, which buses visit whenever passengers are present.

GOAL CIRC-6 Ensure convenient and affordable public transit for all Atwater residents to destinations within the City and to nearby communities and destinations, such as UC Merced.

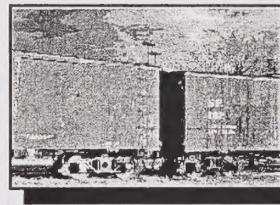
Policy CIRC-6.1 Cooperate with Merced County Transit to provide bus service in all areas of Atwater.

Policy CIRC-6.2 In urban areas, ensure that no residences are more than 1 mile from a bus stop; where feasible, provide bus stops no more than ½ mile from residences.

Policy CIRC-6.3 Require new development to provide right of way and construct shelters for bus stops as determined to be necessary by the City of Atwater and the Merced County Transit.

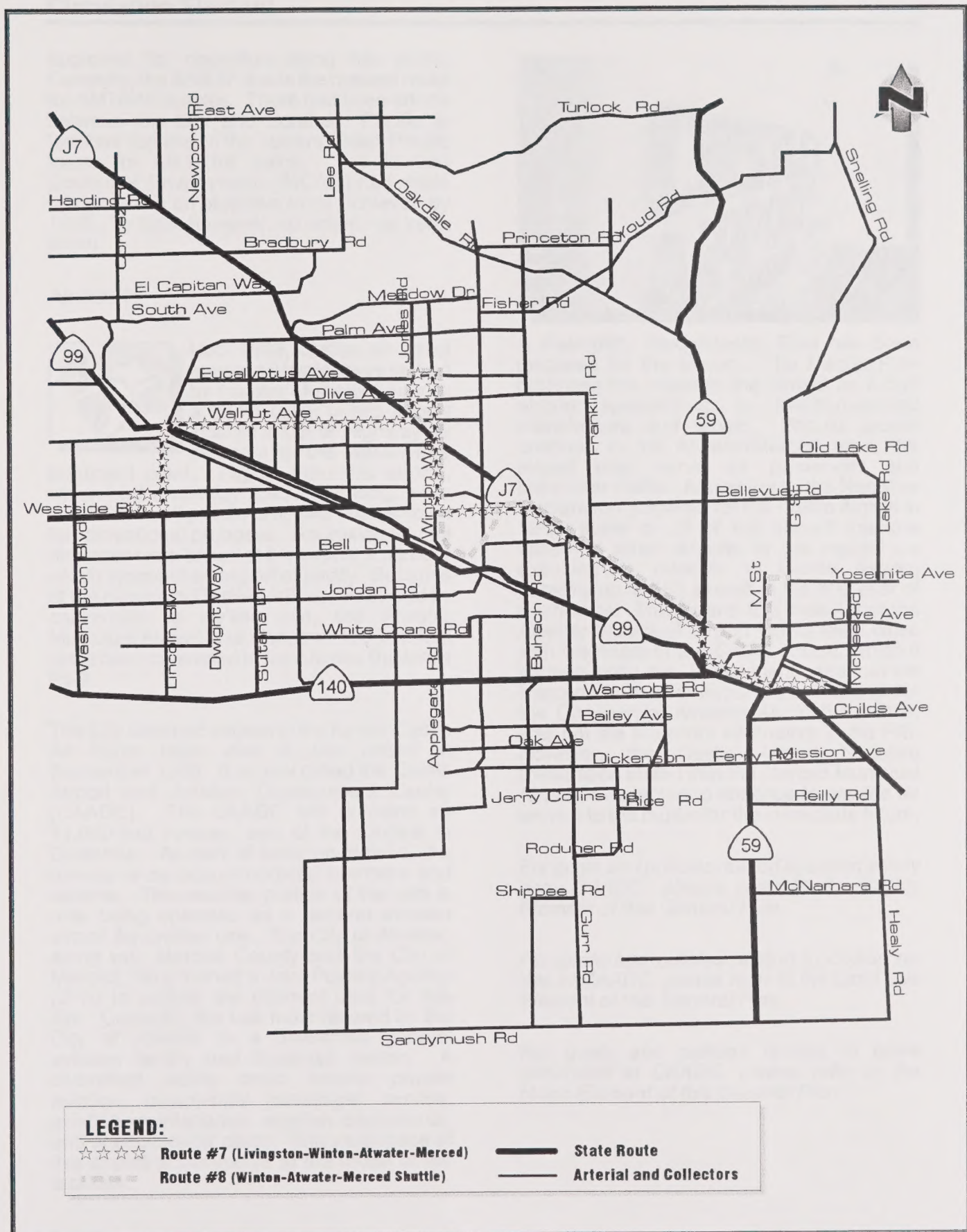
Implementation Program CIRC-6.3.a Forward all major or large-scale residential and commercial development applications to Merced County Transit for their review and recommendations regarding the location of bus stops, shelters, or related features.

RAILROAD SERVICE



The Union Pacific Railroad, the Burlington Northern & Santa Fe Railroad (BN&SF), and the San Joaquin Valley Railroad all provide freight service to the City. They connect the City to major markets within California (the San Francisco Bay Area, Sacramento, and Los Angeles) and to other destinations north and east. Freight terminals and service to specific industries are located throughout the City. Though the railroads are reluctant to provide information on the amount of freight originating in the City, it is likely that the predominant mode for freight movements in the City will continue to be by truck in the foreseeable future. This is certainly the trend expected for raw agricultural commodities moving to packing and processing facilities.

There is no direct passenger rail service to the City. AMTRAK passenger service is available in nearby Merced. The City of Merced and Merced County receive service along AMTRAK's San Joaquin route, with four trains each day connecting northern and southern California. A fifth train was recently



approved for operation along this route. Currently, the BN&SF line is the present route for AMTRAK service. There had been efforts between the City and Southern Pacific to facilitate the use of the current Union Pacific tracks for AMTRAK trains. The Merced Council of Governments (MCAG) had made this rerouting an objective to be achieved by 1995. To date, however, no action has been taken.

AIRPORTS



Until 1995, civilian air travel needs in Atwater were served by Atwater Municipal Airport, a basic utility public airport located south of Highway 99 adjacent to the wastewater treatment plant. Flights from this airport, which had a runway 2,450 feet long, were limited to small private propeller planes flown for recreational purposes. Approximately 45 airplanes were based at the airport, a number which approached airport capacity. Because of the closure of Castle Air Force Base and its conversion to civilian use, the Atwater Municipal Airport was closed in 1995. It has since been converted to the Atwater Business Park.

The City obtained access to the former Castle Air Force Base after it was closed in September 1995. It is now called the Castle Airport and Aviation Development Center (CAADC). The CAADC site contains an 11,800-foot runway, one of the longest in California. As part of base operations, the runway once accommodated bombers and tankers. The aviation portion of the site is now being operated as a general aviation airport for civilian use. The City of Atwater, along with Merced County and the City of Merced, have formed a Joint Powers Agency (JPA) to explore the different uses for this site. Currently, the use most favored by the City of Atwater is a diversified general aviation facility and business center. A diversified facility could include private aviation, commercial passenger service, aviation maintenance, aviation educational, and agriculture/air cargo. The vast space of this airport is conducive to the reuse of the facilities.



A Feasibility Study/Master Plan has been prepared for the airport. The Master Plan proposes the reuse of the airfield as a civil airport specializing in aviation-related manufacture and repair. Should growth continue in the Atwater/Merced area, the airport may serve air passenger and commuter traffic. According to the Negative Declaration prepared for the Castle Airport in 1995, some or all of the aircraft that are based at other airports in the region are expected to relocate to Castle Airport, possibly up to 103 aircraft in the first year of operations. The federal EIS stated that the Atwater Municipal Airport would likely close with the reuse of the Castle airfield, which it subsequently did. It also mentioned that the Merced and Turlock airports may close under the Commercial Aviation Alternative, which was not the preferred alternative in the EIS. However, the Castle Airport Negative Declaration stated that the Merced Municipal Airport is expected to continue to provide air service to the region for the immediate future.

For goals and policies related to airport safety near CAADC, please refer to the Safety Element of this General Plan.

For goals and policies related to civilian reuse of CAADC, please refer to the Land Use Element of this General Plan.

For goals and policies related to noise generated at CAADC, please refer to the Noise Element of this General Plan.

BICYCLES



Bicycles are not currently considered a major mode of travel in the City. However, with the onset of air quality attainment strategies and congestion management, bicycling is considered an effective alternative mode of transportation that can help to improve air quality and reduce the number of vehicles traveling along congested facilities.

The City of Atwater is in the process of adopting a Regional Bike Plan. The bicycle network consists of three classes of bikeways, according to the following design standards established by Caltrans:

- **Class I - Bicycle Paths.** Bike paths that are separated from vehicle traffic, pedestrians, and transit, and are primarily for the use of bicyclists.
- **Class II - Bicycle Lanes.** Bike lanes that provide cyclists exclusive to semi-exclusive use of the roadway, sharing facilities with motor vehicles and pedestrians. Bike lanes have identification signage, pavement stencils, striping, and minimum width requirements.
- **Class III - Bicycle Routes.** Bike routes that are shared facilities, usually with motor vehicles, on streets where bicycle use is secondary. Bicycle Route signs are required to be placed periodically along the route and at changes of direction.

Class I bikeways are located along:

- Buhach Road (Green Sands Avenue - Bellevue Avenue).
- Broadway/Green Sands (Shaffer Road - Buhach Road).
- Bellevue Road (Winton Way - Buhach Road).
- Winton Way (Bellevue Road - Juniper Avenue).
- Juniper Avenue (Sierra Madre Drive - Buhach Road).
- Shaffer Road (Bellevue Road - Camelia Drive).

- Atwater Boulevard (SR 99 - Station Avenue).

Class II bikeways are located along:

- Railroad Avenue (North of Bert Crane Road - Station Avenue).
- Santa Fe Drive (Avenue Two - Winton Way).
- Winton Way (Fruitland Avenue - Santa Fe Drive).

Class III bikeways are located along:

- Fruitland Avenue (Winton Way - Shaffer Road).
- Juniper Avenue (Liberty Street - Sierra Madre Drive).
- Avenue Two (Buhach Road - Santa Fe Drive).
- Terri Drive (Shaffer Road - Bromwell Avenue).
- Fortuna Avenue (Shaffer Road - Bromwell Avenue).
- Elm Avenue (1st Street - Shaffer Road).
- Clinton Avenue (Shaffer Road - Almador Terrace).
- Bridgewater Street (Juniper Avenue - Bellevue Road).
- Almador Terrace (Broadway - Clinton Avenue).
- Bromwell Avenue (Terri Drive - Bellevue Road).
- Shaffer Road (Juniper Avenue - Terri Drive).
- High Street (Juniper Avenue - Menlo Street).
- 1st Street (Broadway - Elm Avenue).
- Liberty Street (Juniper Avenue - Mitchell Avenue).
- Mitchell Avenue (Liberty Street - Willow Street).
- Willow Street (Mitchell Avenue - Olive Avenue).
- Olive Avenue (Willow Street - Maple).
- Maple (Willow Street - Atwater Boulevard).

The bicycle plan provides for connections between major urban and recreational facilities within the City. This plan is expected to be satisfactory for the foreseeable future.

Circulation Element

GOAL CIRC-7 Development of an interconnected system of bikeways and trails throughout Atwater.

Policy CIRC-7.1 Consider bicycle circulation in the review of all proposed public and private development and infrastructure projects. Require that all public and private projects conform with the adopted Regional Bike Plan.

Policy CIRC-7.2 Require that all public and private projects conform with the Regional Bike Plan. Require that the cost of bicycle lanes (including on- and off-street facilities) be paid by private development for those facilities located within a proposed development project.

PEDESTRIAN FACILITIES



Pedestrian facilities within the immediate vicinity of schools and recreational facilities are also important components of the non-motorized transportation system. Pedestrian circulation facilities within and around school and recreational areas, in the form of sidewalks built to current City standards, are provided where they are appropriate and enhance the safety of those who choose to walk to and from their destination.

GOAL CIRC-8 Provide a safe and efficient pedestrian circulation system which connects residential areas, schools, and commercial areas with parking lots and public transportation.

Policy CIRC-8.1 Require new public and private development and infrastructure projects to include sidewalks or on-site pedestrian features.

Policy CIRC-8.2 Ensure that pedestrian circulation within commercial development projects is considered and that safe walkways separated from parking stalls and drive aisles are provided.

For policies related to land use patterns which encourage pedestrian use, please refer to the Land Use Element of this General Plan.



CONS

[illegible]

SPACE AND VIBRATION

4. OPEN SPACE AND CONSERVATION

OPEN SPACE AND CONSERVATION ELEMENT

INTRODUCTION

This element is a combination of two elements required by state law. The state General Plan Guidelines permit the combination of elements, provided that all of the issues required to be discussed in each are included. Under California Government Code Section 65302(d) and (e), the general plan must include:

"A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources."

"An open-space element as provided in Article 10.5 (commencing with Government Code Section 65560)."

The Open Space Element requires the discussion of various open space issues. These issues include open space for preservation of natural resources, open space used for the managed production of resources, open space for outdoor recreation, and open space for public health and safety. Open space for public health and safety is discussed in the Safety Element. Open space for outdoor recreation is addressed within the Land Use, Public Facilities, and Community Infrastructure Element.

Within the Atwater Planning Area, the most significant natural resource is the prime agricultural land surrounding the City. Issues include the conversion of farmland and the consequent loss of open space. Due to historic agricultural uses, the presence of wildlife species and habitat is relatively minor. However, the open space at the CAADC site contains sensitive habitats and species.

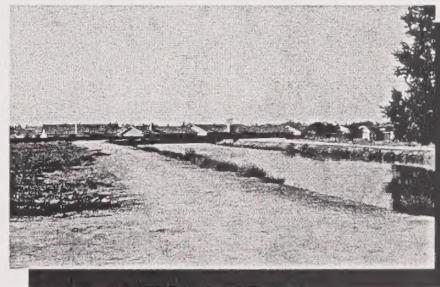
There are few other natural features within the Planning Area. Additional conservation issues of concern include air quality and water quality, since the City is located in an area where both have been adversely affected.

WATER SUPPLY AND QUALITY

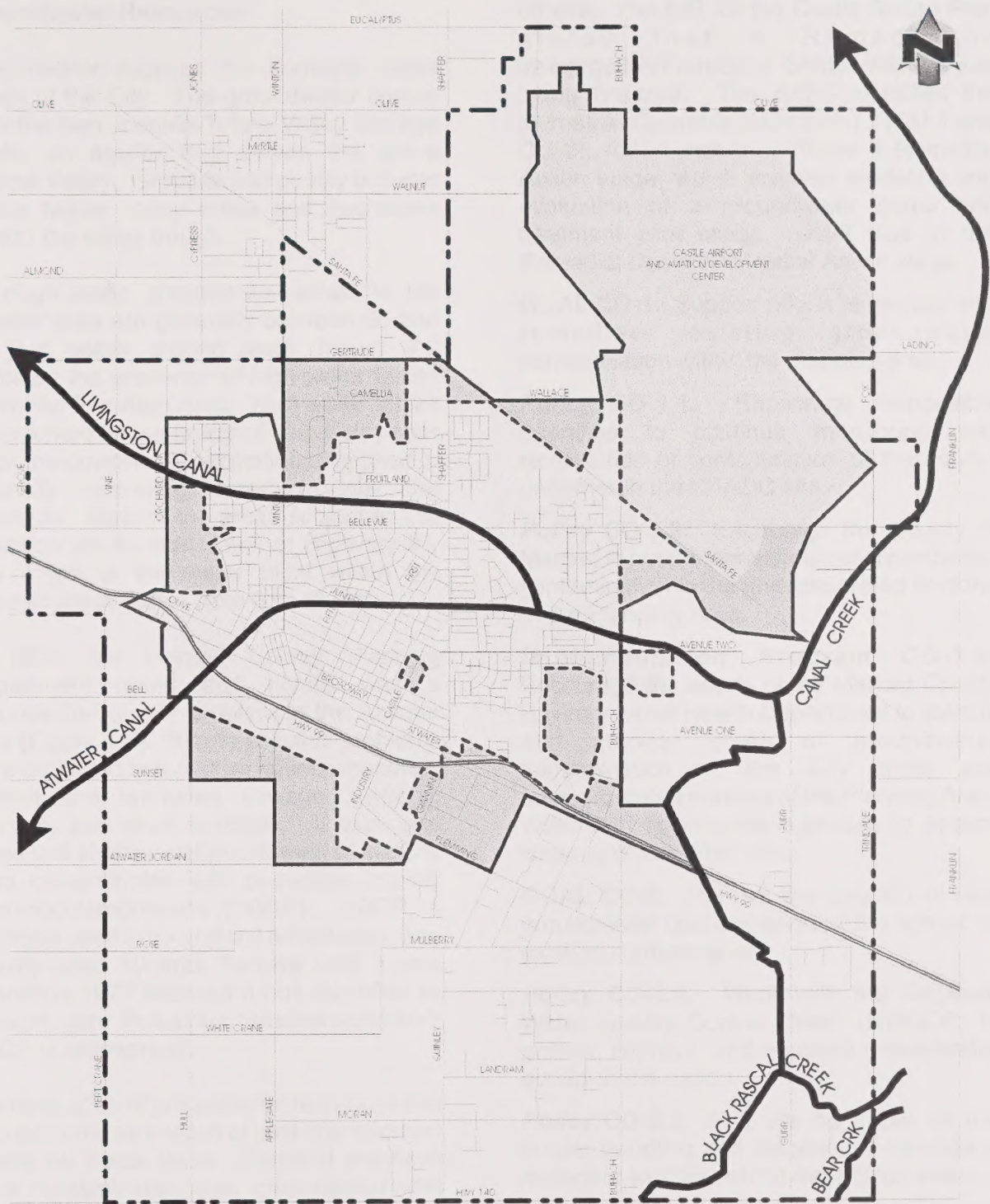
Surface Waters



As noted in Figure 4-1, there are few natural streams in the Planning Area. Canal Creek lies adjacent to the southeastern boundary of the CAADC site. South of the City, the Parreira Drain and Atwater Drain accept storm water drainage. Bear Creek and Black Rascal Creek traverse the far southeastern corner of the Study Area. More significant are the irrigation canals, managed by the Merced Irrigation District (MID). These include the Livingston Canal and the Atwater Canal, both of which pass through the City itself. The Escaladian Canal is located in the northern portion of the Planning Area. The Main Canal diverts water from the Merced River into Canal Creek, which in turn feeds the Livingston and Atwater Canals.



There are no large surface bodies of water within the Planning Area. The closest body of water is Castle Reservoir, which is located approximately four miles northeast of the City. Constructed by the U.S. Army Corps of Engineers, Castle Reservoir has a maximum storage capacity of 10,400 acre-feet, and it is held back by an earthen dam 52.5 feet high and 2,250 feet long at its crest. Its primary purpose is flood control. Further northeast, Lake McClure and Lake McSwain, both MID reservoirs, are used to provide irrigation water and to generate electricity.



LEGEND:

- Project Study Limits
- ... Atwater City Limits

- Sphere of Influence (1984)
- Major Canal & Waterways



Castle Airport & Aviation Development Center

Groundwater Resources

Groundwater supplies the domestic water needs of the City. The groundwater comes from the San Joaquin-Tulare Valley Storage Basin, an aquifer that serves the entire Central Valley. Groundwater quality is better in the higher valley areas and decreases toward the valley trough.

Although static groundwater levels in the Atwater area are generally between 55 and 89 feet below ground level, Figure 4-2 indicates the presence of high water tables within the Planning Area. High water tables occur where dense layers of heavy clay soils block the downward percolation of applied or naturally occurring moisture into the substrata. Most of the areas subject to this condition are located south of Highway 99. The depth to the water table within the affected areas varies from 0 to 10 feet.

In 1989, the Merced County Planning Department noted that nitrate was a groundwater quality problem in the Atwater area (Figure 4-3). Nitrate pollution problems were attributed to fertilizers, animal manures, treated and untreated sewage, geologic sources, and plant residues. It was also noted that shallow wells northwest of the City were contaminated with pesticides, mainly dibromochloropropane (DBCP). DBCP, a pesticide used to control soil nematodes, was heavily used by area farmers until it was banned in 1977 because it was identified as a carcinogen. Pollution of shallow wells from DBCP is widespread.

Contamination of groundwater resources has also occurred as a result of past operations at Castle Air Force Base. Disposal practices have contaminated local groundwater with trichloroethylene (TCE), 1,2-dichloroethane (1,2-DCA), 1,2-dichloroethylene (1,2-DCE), tetrachloroethylene (PCE), carbon tetrachloride, benzene, methylene chloride, dibromochloromethane, and chloroform, among others. Three contaminant plumes have been identified underneath the CAADC site, with the main TCE plume covering most of the area south of the airfield and extending

off site. The EIR for the Castle Reuse Plan stated that a Remediation Investigation/Feasibility Study (RI/FS) was being finalized. The RI/FS identified the plumes as Operable Units 1 and 2 (OU-1 and OU-2). OU-1 was in a Phase 1 Remedial Action stage, which involves modeling and evaluation of a groundwater pump and treatment pilot study. OU-2 was in the Remedial Design/Remedial Action stage.

GOAL CO-1. Support efforts to monitor and remediate existing groundwater contamination within the planning area.

Policy CO-1.1. Encourage responsible agencies to continue monitoring and remediation of contamination of the aquifer underneath the CAADC site.

Policy CO-1.2. Encourage the County of Merced to pursue remediation of groundwater contamination in the unincorporated portions of the Planning Area.

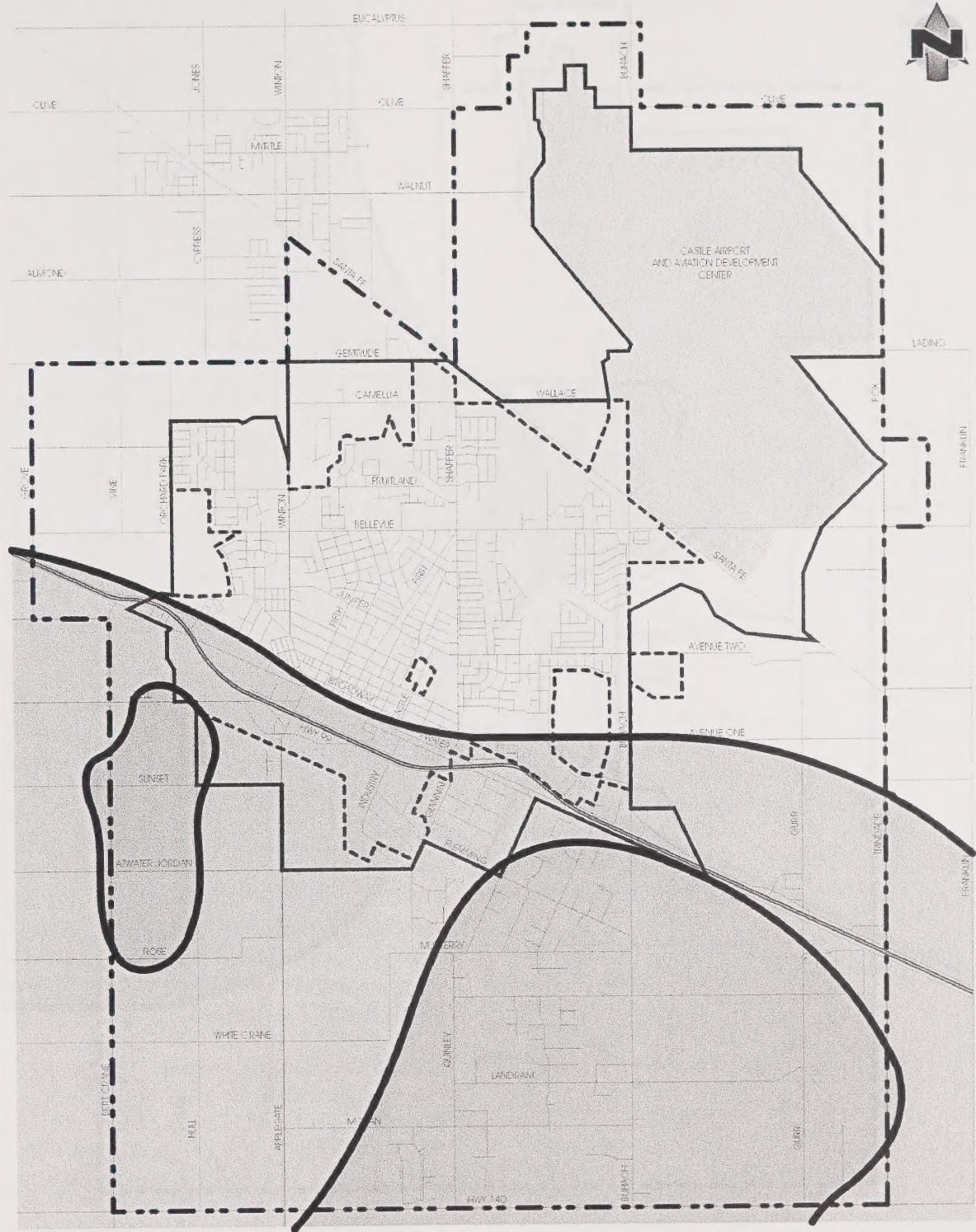
Implementation Program CO-1.a. Encourage the efforts of the Merced County Environmental Health Department to identify and monitor areas of groundwater contamination in the City limits and unincorporated portions of the Planning Area. Work with appropriate agencies to ensure cleanup of identified sites.

GOAL CO-2. Prevent the creation of new groundwater contamination or the spread of existing contamination.

Policy CO-2.1. Work with the Regional Water Quality Control Board (RWQCB) to protect, improve, and enhance groundwater quality in the region.

Policy CO-2.2. Educate the public on the proper handling and disposal of hazardous materials and household hazardous waste.

Implementation Program CO-2.a. In cooperation with other appropriate agencies, establish and participate in an education program for the public that may include brochures, mailings, and media advertisements.



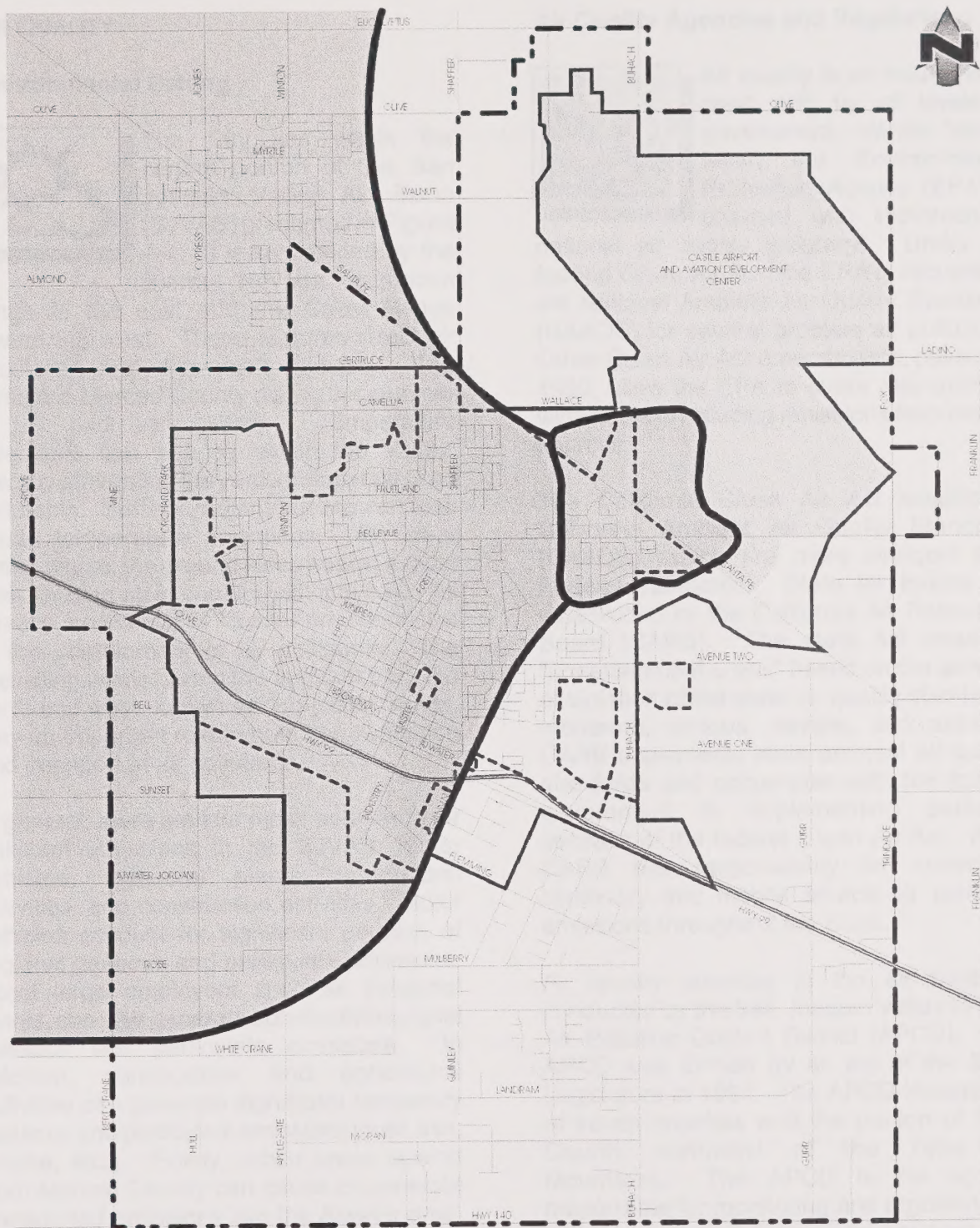
LEGEND:

- Project Study Limits
- - - - Atwater City Limits

— Sphere of Influence (1984)

- 0 - 5 Feet
- 5 - 10 Feet

 Castle Airport & Aviation Development Center



LEGEND:

- - - Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- ▒ DBCP and Nitrates
- Trichloroethylene

 **Castle Airport & Aviation Development Center**

AIR QUALITY

Environmental Setting



The City lies within the central portion of the San Joaquin Valley Air Basin (SJVAB) presented in Figure 4-4. It is surrounded by the Sierra Nevada mountain range to the east and the Coast Range toward the west. These features direct air circulation and dispersion patterns. The climate in Merced County during the summer is dry and very warm. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. Surface radiant cooling can also cause temperature inversions. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. As a result, conditions in Atwater are conducive to the containment of air pollutants. The prevailing winds during the summer from the north and west, known as "up-valley" winds, play an important role in both the dispersion and transport of air pollutants.

In general, there are four major sources of air pollutant emissions in the SJVAB: motor vehicles, industrial plants, agricultural activities, and construction activities. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants, can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). Finally, urban areas upwind from Merced County can cause or generate transported emissions into the Atwater area.

The principal factors that affect air quality in and around Atwater are: (1) the *sink effect*, climatic subsidence and temperature inversions and low wind speeds; (2) *automobile and truck travel*; and (3) increases in mobile and stationary pollutants generated by *local urban growth*.

Air Quality Agencies and Regulations



Air quality is an issue that is dealt with by all levels of government. At the federal level, the Environmental Protection Agency (EPA) is charged with implementing national air quality programs. Under the federal Clean Air Act, the EPA is required to set National Ambient Air Quality Standards (NAAQS) for several problem air pollutants. Other Clean Air Act amendments, passed in 1990, allow the EPA to share responsibility with states in reducing emissions from mobile sources.

The California Clean Air Act establishes California Ambient Air Quality Standards (CAAQS), which are more stringent than Federal standards. State air basins are established by the California Air Resources Board (CARB). The state Act classifies "nonattainment areas" based on the severity of violation of the state air quality standards: moderate, serious, severe, and extreme. CARB implements state ambient air quality standards and cooperates with the federal government in implementing pertinent sections of the federal Clean Air Act. Also, CARB has responsibility for controlling stationary and mobile source air pollutant emissions throughout the State.

Air quality planning in the air basin is conducted by the San Joaquin Valley Unified Air Pollution Control District (APCD). The APCD was formed by an act of the State Legislature in 1991. The APCD includes all of seven counties and the portion of Kern County northwest of the Tehachapi Mountains. The APCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Merced County and throughout the SJVAB. It does so through both its permitting authority for most types of stationary emission sources and its planning and review activities for other sources. The APCD also has responsibility for monitoring air quality and setting and enforcing limits for source emissions.



Open Space and Conservation Element

Current Air Quality

Federal and state ambient air quality standards have been established for the following six "criteria" pollutants: nitrogen dioxide, sulfur dioxide, particulate matter less than 10 microns in diameter (PM₁₀), carbon monoxide, lead, and ozone. Criteria pollutants are those for which air quality standards that protect human health have been established. Applicable federal and state standards for each regulated pollution category, along with data from the applicable monitoring sites, are provided in Table 4-1.

Table 4-1
Federal and State Standards
for Nonattainment Pollutants
in the City of Atwater

Pollutant	Applicable Standard	Averaging Time	Monitoring Station Data ¹
Ozone	0.09 ppm State 0.12 ppm Federal	Max. Hourly High	0.13 ppm
		Standard Violation	44 days
Carbon Monoxide (CO) ²	9.0 ppm State/ Federal 20.0 ppm State	Max. Eight-Hour High	N/A
		Standard Violation	
Particulates (PM ₁₀)	50 ug/m ³	24-Hour High	61 ug/m ³

- 1) The closest monitoring sites to the City of Atwater are located on South Coffee Avenue and the Health Department in the City of Merced. First highest annual data used.
- 2) CO monitoring site is in the City of Modesto (Stanislaus County).

Source: California Air Resources Board, 1996, *Air Quality Data Summary*; VRPA.

The City of Atwater is located in a nonattainment area for ozone and PM₁₀. More detailed information concerning the status of criteria pollutants in Atwater and the San Joaquin Valley Air basin is presented below.

Ozone

The most severe air quality problem in the SJVAB is the high level of ozone. Ozone is not directly emitted into the atmosphere, but instead is a product of chemical reactions between reactive organic gases (ROG), nitrogen oxides, and sunlight. Ozone can cause eye irritation and impair respiratory functions. The SJVAB has been designated a "serious" nonattainment area under federal ozone standards, and a "severe" nonattainment area under state standards. In 1991, the APCD prepared an Air Quality Attainment Plan that contains strategies for the reduction of ozone emissions. In 1992, the ARB postponed a decision on the Plan's ozone strategies until more information was collected.

Suspended PM₁₀

PM₁₀ refers to particulate matter less than 10 microns in diameter - those that can be inhaled and cause health effects. Very small particulate of certain substances can cause direct lung damage, or can contain absorbed gases that may be harmful when inhaled. Particulates can also damage materials and reduce visibility. The SJVAB has been classified as a "serious" nonattainment area for PM₁₀ by the federal government. The air basin is also classified as being in nonattainment of state PM₁₀ standards. The APCD prepared a PM₁₀ Nonattainment Area Plan in 1991, which was subsequently incorporated into California's State Improvement Plan (SIP). In 1994, the APCD approved and submitted a Serious Area PM₁₀ Nonattainment Plan after the EPA redesignated the San Joaquin Valley Air Basin as a serious nonattainment area.

Other Criteria Pollutants

Because carbon monoxide (CO) is emitted primarily by motor vehicles and is non-reactive, ambient CO concentrations normally follow the spatial and temporal distributions of vehicular traffic. High levels of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular

disease and cause fatigue, headaches, and dizziness. Within the SJVAB, one urban area is designated as non-attainment for carbon monoxide - Fresno. Since the City of Atwater is not located within the Fresno urban area, Atwater is not considered to be in non-attainment of CO standards. The SJVAB is currently in attainment of all standards for other criteria pollutants.

GOAL CO-3. Strive to reduce air emissions and obtain goals set in local and regional air quality attainment plans.

Policy CO-3.1. Cooperate with the San Joaquin Valley Unified Air Pollution Control District (APCD) in implementing air quality improvement plans prepared by the District.

Policy CO-3.2. Encourage land use development projects that would result in fewer adverse air quality impacts, such as mixed use and pedestrian-oriented projects.

Policy CO-3.3. Encourage the use of modes of transportation other than automobiles.

Implementation Program CO-3.a. In cooperation with the APCD, adopt thresholds of significance for air quality impacts that the City can apply in the evaluation of development projects for which the City has received an application, and for use in developing mitigation measures that may be necessary.

Implementation Program CO-3.b. Implement the sections of the Circulation Element of the City's General Plan that encourage the use of alternative modes of transportation, such as the development of the bikeway system.

Implementation Program CO-3.c. Incorporate as a condition of approval for projects that include significant grading or other earth moving activities measures that control emissions of dust.



The Soil Survey of the Merced Area, conducted by the Soil Conservation Service (now the Natural Resources Conservation Service), indicates that soils in the Atwater area are of the Delhi-Atwater association. This association consists of well-drained, wind-modified, sandy soils. In scattered depressions, the water table is high. Delhi soils consist of sand and loamy sand. Atwater soils are similar, but they have a slight accumulation of clay in their subsoil. Most of the City sits upon Atwater Series soils. Atwater sand, 0 to 3 percent slopes, has good natural drainage and little or no hazard of water erosion, but there is a severe hazard of wind erosion. The southeastern corner of the City is underlain by Atwater loamy sand, 0 to 3 percent slopes. The water holding capacity of this soil and wind erosion hazard are moderate. This soil is considered very suitable for agricultural use. In the northeast portion of the City, the predominant soil is Atwater loamy sand, deep over hardpan, 0 to 3 percent. This soil is similar to the Atwater loamy sand soil, except that it is underlain by a cemented hardpan of 3.5 to 5 feet. Scattered throughout the City are pockets of Atwater loamy sand, imperfectly drained variant, 0 to 3 percent slopes, and Atwater loamy sand, deep over hardpan, poorly drained variant, 0 to 1 percent slopes. Both soils present some drainage problems.

Outside the City limits, Greenfield Series soils are found along Canal Creek southeast of the CAADC site, in the McSwain area and other portions of the Planning Area south of the City. Greenfield soils tend to be well drained and good for agricultural uses.

Scattered throughout the southern part of the Planning Area are Dinuba Series soils, Hilmar Series soils and Snelling Series soils. Dinuba soils in the Planning Area are sandy loam in composition and tend to be located in high water table areas. The Hilmar soil is a loamy sand that is slightly saline-alkali. It is useful mainly for pasture and some field crops. The Snelling soil is well drained, has a low erosion hazard, and is suitable for pasture and field

SOILS

crops.

AGRICULTURAL RESOURCES



Agriculture has been, and continues to be, an important part of the Atwater economy. Outside of the urbanized City, most of the land in the Planning Area is currently devoted to agricultural uses. Almonds, grains, grapes, and pasturage are the main crops that are grown.

The state Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) produces maps of Important Farmlands and keeps records of farmland acreage. Information depicted within the 1996 Important Farmland Map for Merced County, as reflected in Figure 4-5, shows that the City is mostly surrounded by land designated as Prime Farmland, which has the best combination of physical and chemical characteristics for crop production. A large parcel of land adjacent to and southwest of the City is classified as Farmland of Local Importance. This is land of importance to the local agricultural economy, and it may include dairies, dryland farming, aquaculture, and uncultivated land with soils that qualify as Prime Farmland or Farmland of Statewide Importance.

One of the principal constraints to the expansion of the City is the adverse impact expansion would have on prime farmlands. However, given the City's location, urbanization in any direction would mean the loss of farmland. Further development in the unincorporated areas outside the City would also lead to farmland conversion. Such a process has been occurring in the McSwain area, where residential subdivisions have been gradually displacing almond orchards. This General Plan focuses future urban development in compact growth areas and encourages the retention of Agricultural and open space uses outside of the City's 2000 proposed Sphere of Influence.

As urbanization moves out into agricultural

areas, urban/rural conflicts may occur. Residents in new developments located adjacent to agricultural lands may be subject to adverse impacts from agricultural operations, including noise, dust, odors, and chemical fertilizers and pesticides. The agricultural activities, in turn, may face pressure to modify, curtail, or cease operations that generate the nuisances.

GOAL CO-4. Ensure the continued viability of agriculture in the area surrounding the City's proposed Sphere of Influence.

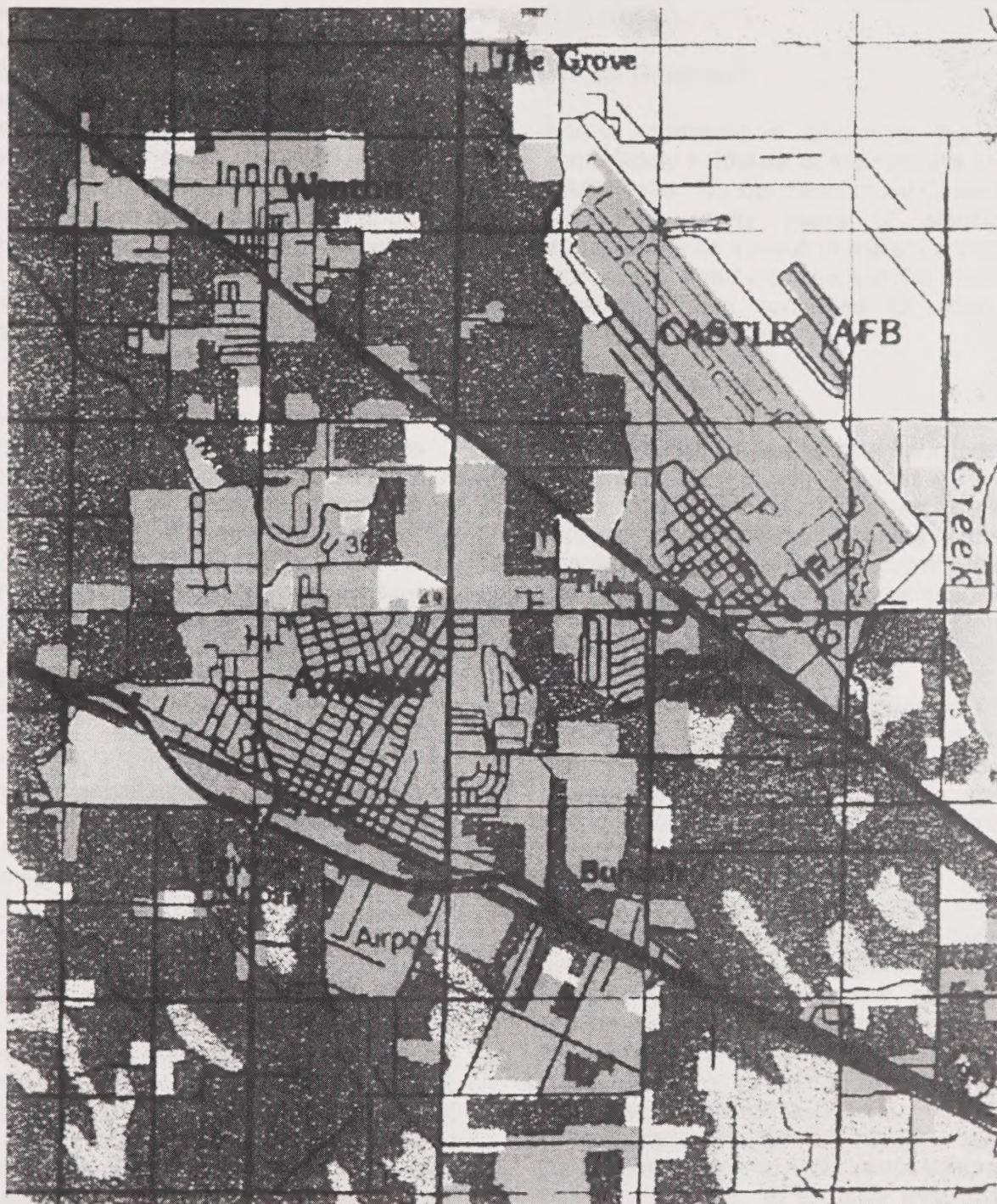
Policy CO-4.1. Comply with all agricultural preservation policies and implementation programs developed jointly by the City and Merced County.

Implementation Program CO-4.a. Continue to work with the County of Merced to develop mutually acceptable policies and implementation programs designed to avoid and/or mitigate the conversion of Agricultural land outside of the City's proposed Sphere of Influence.

MINERAL RESOURCES



The City, along with most of Merced County, is located in the center of a great agricultural belt, produced primarily from unconsolidated sedimentary rocks and alluvial sediments deposited by several of the river tributaries draining into the San Joaquin River. Mineralogical occurrences within the County, therefore, are less numerous than other areas of the state. The Merced County General Plan identified two active mining sites located southwest of Atwater near State Highway 140. Although the product mined at the sites is not explicitly stated, the County's General Plan mentions that a sand deposit is located in the vicinity of Atwater. No other mining activity has been identified in or near the Planning Area.



LEGEND:

- -- Project Study Limits
- - - - Atwater City Limits
- — Sphere of Influence (1984)

- Urban & Built-Up Land
- Prime Farmland
- Unique Farmland
- Otherland

- Farmland of Local Importance
- Grazing Land
- Castle Airport & Aviation Development Center

The State Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to prepare a geological inventory of selected important mineral commodities within a defined study region. The State Geologist then classifies surveyed areas based on the presence or absence of mineral resources. For areas classified as having mineral resources, the State Mining and Geology Board may designate all or part of these areas as having mineral resources of "statewide" or "regional significance." The Board must transmit a report of its designation to the affected local government, which must then develop and adopt policies for the management of land use of designated areas. The state Division of Mines and Geology is in the process of preparing a mineral land classification map for Merced County. However, the map is not scheduled to be adopted until summer or fall of 2000. Once the resource areas have been classified, additional actions are necessary to formally apply a state designation. (John Clinkenbeard, pers. comm.). Thus, no state-designated mineral resource areas currently exist in Merced County.

The County's General Plan identified potential sand and gravel resource sites. The nearest site to the City of Atwater is the Merced River to the north. However, the river itself is located outside of the Planning Area.

BIOLOGICAL RESOURCES

Habitat Types

The Planning Area is within the central eastern portion of the San Joaquin Valley. Prior to settlement in the mid-19th century, the area consisted of grassland with scattered oaks. Scattered vernal pools were also present on the higher terraces adjacent to the foothills of the Sierra Nevada mountain range.

The majority of natural vegetation in the area has been removed for urban and agricultural land uses, and the only large area of natural vegetation remaining is at the former Castle Air Force Base site. Natural habitat types present in the area include: annual grassland,

riparian scrub, vernal pools and swales, seasonal wetland, and emergent marsh (Figure 4-6).

Annual Grassland

Annual grassland is limited to the area immediately northeast of the runways at the CAADC site. Annual grassland at Castle has undergone many years of significant disturbances as a result of military activities. Annual grassland elsewhere in the Planning Area has been converted to urban or agricultural land uses.

Riparian Scrub

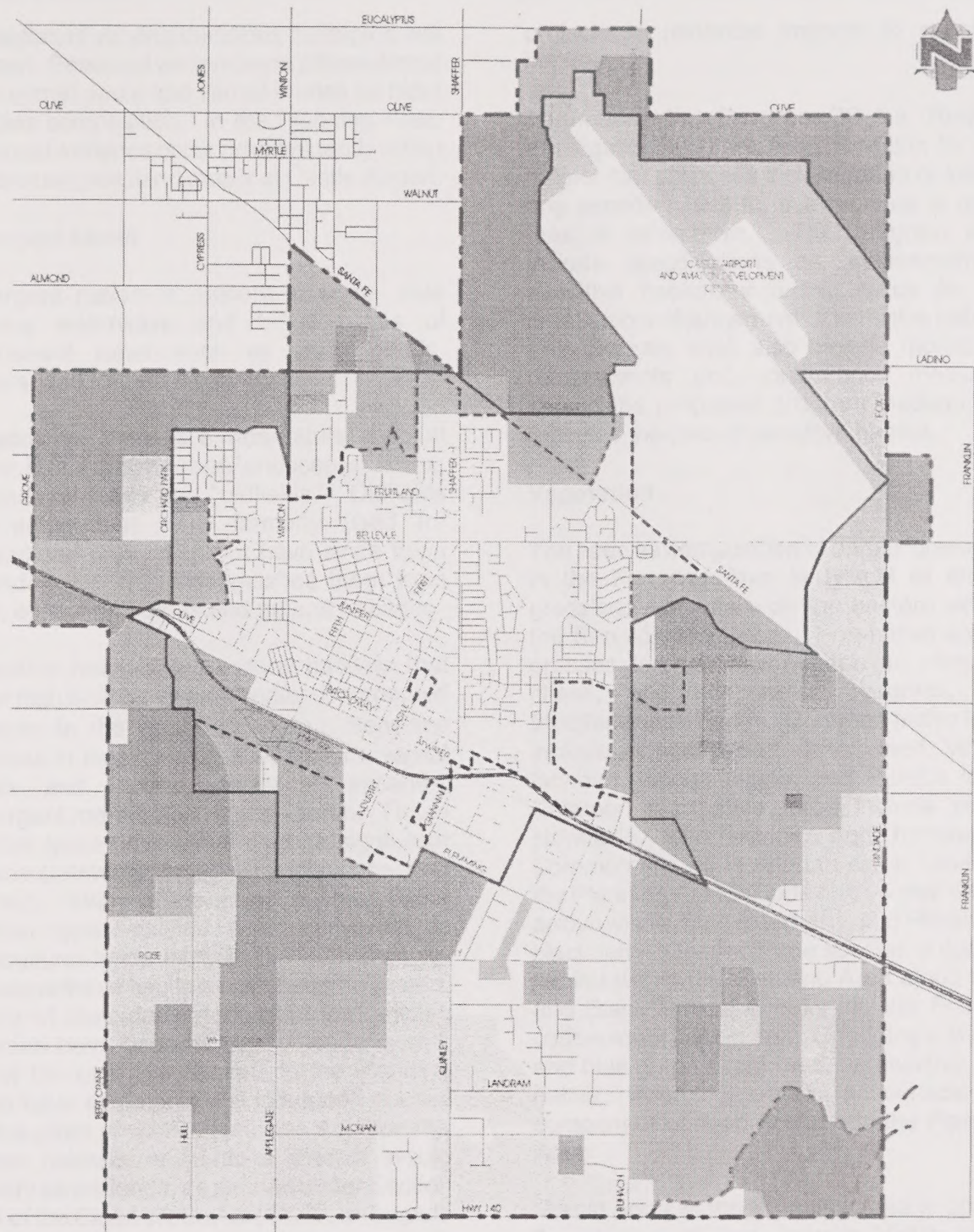
Riparian habitat in the Planning Area consists primarily of open to dense patches of scrub along Black Rascal and Bear Creeks. Riparian scrub in the Planning Area is characterized as sporadically occurring dense assemblages of shrubs with occasional trees.

Vernal Pool and Swale

Vernal pools are landscape depressions that pond shallow water seasonally. The pools support a distinctive biota adapted to periodic or continuous inundation during the winter-spring season and to the absence of ponded water or saturated soil during the summer-fall season. In contrast, swales are broad, shallow, seasonally wet areas that convey water primarily during and shortly after rain events and do not actually pond water like vernal pools. Surface runoff collects in swales, wetting and saturating the soil for short periods. Some swales connect vernal pools, filling or draining them. Others meander through vernal pool terrains but do not physically connect with individual vernal pools. In the Planning Area, vernal pools and swales are limited to an area east of the runways at the CAADC site.

Seasonal Wetland

Seasonal wetlands are shallow to deep depressions underlain by soils with slow permeability that promote ponding or soil



LEGEND:

- Project Study Limits
- - - Atwater City Limits
- Sphere of Influence
-  Castle Airport & Aviation Dev. Center

Upland Habitats:

-  Orchard
-  Cropland
-  Annual Grassland
-  Irrigated Pasture
-  Oldfield

-  Urban/Landscape (i.e., developed)

Wetland Habitats:

-  Emergent Marsh
-  Riparian Scrub

-  Vernal Pool & Swale Concentration
(may contain some emergent marsh and/or seasonal wetlands habitats)

Open Space and Conservation Element

saturation of varying durations during the wet season. Seasonal wetlands are differentiated from vernal pools and vernal swales by plant species composition. In the Planning Area, seasonal wetlands occur predominantly within the annual grassland matrix at Castle Airport.

Emergent Marsh

Emergent marsh is present in some slow moving waterways and fringe areas of permanent water such as stock ponds, creeks, and irrigation canals.

In addition, there are non-natural habitat types that include urban/landscaped areas, agricultural lands and "oldfields." Oldfields are areas that were formerly used for agricultural production but have since been abandoned. This distinguishes them from both agricultural lands and natural habitats.

Sensitive habitats are natural habitats that have high biological value and/or documented scarcity in the region or state. Sensitive habitats in the Planning Area include vernal pools and swales, seasonal wetlands, emergent marsh, and riparian scrub. These habitat types have all undergone significant losses statewide since the middle of the 19th century. Many of the areas in which these habitat types existed were converted to agricultural lands early in the 20th century. Because these habitats have become scarce, many of their dependent plant and wildlife species have become rare or endangered. All of the sensitive habitats in the Planning Area have some potential to support special status plant or wildlife species. Additionally, these habitats or portions thereof would qualify as wetlands, as defined under Section 404 of the Clean Water Act (CWA), and would therefore be under jurisdiction of the U.S. Army Corps of Engineers (Corps).

GOAL CO-5. Minimize impacts of future development on sensitive habitats.

Policy CO-5.1. Where feasible, avoid development in areas identified as sensitive habitat. Where avoidance is not feasible, apply mitigation measures to development

projects to minimize impacts to sensitive habitats.

Implementation Program CO-5.a. Require a mitigation program as a condition for any project that proposes the alteration or loss of any sensitive habitat, if avoidance is not a feasible alternative. The program shall include specifications on replacement of sensitive habitat, including ratios for the creation or enhancement of sensitive habitat. The program shall also include monitoring requirements and contingency measures should the proposed program inadequately replaces the loss of sensitive habitat.

Vegetation

The species composition of annual grassland in the Planning Area is typical of annual grassland elsewhere on the eastern side of the San Joaquin Valley. Non-native annual grasses dominate this habitat, including soft chess, wild oat, Italian ryegrass, and Mediterranean barley. Common native forbs include vinegar weed, dove weed, virgate tarweed, bicolor lupine, and Pursh's lotus. Common non-native forbs include yellow starthistle, wild lettuce, and horseweed. Common shrubs in riparian scrub habitat in the Planning Area include narrow-leaf willow, arroyo willow, blue elderberry, and Himalayan blackberry. Common tree species in riparian habitat within the Planning Area along Bear and Black Rascal Creeks include Fremont cottonwood, valley oak, Goodding's willow, and blue gum. Giant reed, an invasive non-native weed, is also a conspicuous component of riparian scrub in the Planning Area.

Vernal pools in the Planning Area support a flora typical of San Joaquin Valley vernal pools. Vernal pool basins are dominated by coyote thistle, Fremont's goldfields, small stipitate popcorn flower, bractless hedge hyssop, woolly marbles, cleistogamus spike-primrose, and common spike rush. Subdominant species interspersed among the dominant species listed above include hyssop loosetrife, Sacramento mesa mint, and hairgrass.

Several rare, threatened, or endangered plant species are also found infrequently in vernal pools in the region. These rare plant species include, but are not limited to, San Joaquin Valley orcutt grass, Myer's navaretia, Colusa grass, Greene's tuctoria, succulent owl's clover, hairy orcutt grass, and Hoover's spurge. Succulent owl's clover and Colusa grass are known to occur at Castle Airport. These two plant species are discussed in more detail later in this chapter.

Swales are dominated by many of the same species as vernal pools with the addition of Italian ryegrass and Mediterranean barley. Common seasonal wetland plant species include curly dock, ammania, cocklebur, Bermuda grass, dallis grass, and nutsedge.

Common plant species in emergent marsh within the Planning Area include broad-leaved cattail, common tule, burhead, ditch-grass, and arrowhead. Emergent marsh generally exists as a dense thicket when dominated by common tule or broad-leaved cattail or as a more sparsely vegetated habitat when dominated by burhead or arrowhead.

Vegetation in urban and landscaped areas is comprised of an array of non-native horticultural species, selected for their aesthetic appeal and ease of propagation. Orchard trees and common irrigated pasture species are found on agricultural lands. Oldfield vegetation is characterized by a predominance of native and non-native weedy herbaceous species.

Wildlife

Annual grasslands in the Planning Area are important foraging areas for many raptors, such as red-tailed hawks, American kestrels, northern harriers, great horned owls, and barn owls. Songbirds, including western kingbirds, cliff swallows, barn swallows, yellow-billed magpies, American crows, western meadowlarks, and savanna sparrows also forage in grasslands. Killdeer, ring-necked pheasants, western meadowlarks, pocket gophers, voles, and black-tailed hares nest or breed in grasslands. Several species

of reptiles also breed and forage in grasslands, including western fence lizards, gopher snakes, and common kingsnakes.

Because riparian scrub occurs in dense clumps along Black Rascal and Bear Creeks, it offers nesting, resting, breeding, and escape cover to a variety of wildlife species. This habitat type has high species diversity and wildlife value. Species that typically take cover and forage in riparian scrub habitats in the Planning Area include: California quail, American goldfinch, lesser goldfinches, spotted towhees, gray fox, coyote, raccoon, striped skunk, Virginia opossum, common kingsnake, and Pacific chorus frog.

Vernal pools and swales have high wildlife value and wildlife species diversity. Vernal pools and swales in the Planning Area, especially within the CAADC site, are probably used by many water birds and other wildlife during the wet season. Shorebirds, waterfowl, and wading birds frequent vernal pools and swales during the winter and early spring. Water birds, such as mallards, great egrets, killdeer, American avocets, greater yellow-legs, black-necked stilts, feed or roost in the shallow pools. Cliff and barn swallows feed on insects around these pools. The pools also provide drinking and bathing water into the spring months, when water in the area may be limited. Vernal pools and swales are suitable habitat for a number of federally listed invertebrates such as vernal pool fairy shrimp and vernal pool tadpole shrimp. Vernal pool fairy shrimp, a federally listed threatened species, is known to occur in vernal pools at the Castle Airport (Department of the Air Force 1994). Seasonal wetlands have similar wildlife values as vernal pools.

Although emergent marsh vegetation along Black Rascal Creek, Bear Creek, and irrigation canals is limited in distribution and extent, they have high wildlife value. Emergent marsh vegetation provides habitat for a variety of wildlife species, including pied-billed grebes, American bitterns, mallards, American coots, muskrats, and beavers. One beaver dam was observed within Black

Open Space and Conservation Element

Rascal Creek at its intersection with Franklin Road. Reptiles, such as common garter snakes, and amphibians, including Pacific treefrogs, bullfrogs, and western toads, also breed and forage in marshes.

The croplands in the Planning Area have moderate to high wildlife value. Alfalfa has high value for wildlife, especially raptors (e.g., Swainson's hawks, red-tailed hawks, and northern harriers), wading birds (e.g., great egrets), rodents (e.g., voles and pocket gophers), and songbirds (e.g., Brewer's blackbirds, red-winged blackbirds, brown-headed cowbird, and western meadowlarks). Coyotes, common kingsnakes, and striped skunks are other common wildlife species that may forage in alfalfa fields and other agricultural crops.

Irrigated pasture and oldfields have low wildlife value and low wildlife species diversity. Yet many common wildlife species are often found in both habitats. These include coyotes, California voles, California ground squirrels, pocket gophers, morning doves, rock doves, western meadowlarks, red-winged blackbirds, Brewer's blackbirds, cowbirds, killdeer, western fence lizards, common gopher snakes, and kingsnakes.

Urban and landscaped areas in the Planning Area have low wildlife value and low wildlife species diversity, although some common wildlife species use this habitat type. Although orchards provide nesting habitat for several species of birds, they have low wildlife species diversity and low value for most wildlife species because of the lack of ground cover, low plant species diversity, use of pesticides, and human disturbances such as spraying, pruning, and harvesting.

Special Status Species

For the purposes of this General Plan, special status species are defined as follows:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (62 FR 182: 49397-49411, September 19, 1997).
- Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA) (State CEQA Guidelines, Section 15380).
- Plants listed as rare or endangered under the California Native Plant Protection Act (Cal. Fish and Game Code, Section 1900 et seq.).
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B and 2 in Skinner and Pavlik 1994).
- Plants listed by the CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in Skinner and Pavlik 1994), which may be included as special-status species on the basis of local significance or recent biological information;
- Animal species of special concern to the California Department of Fish and Game (Remsen 1978 [birds], Williams 1986 [mammals], and Jennings and Hayes 1984 [amphibians and reptiles]).
- Animals fully protected in California (Cal. Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

As noted in Figure 4-7, two special status plant species, Colusa grass and succulent owl's clover, are known to exist in the area. Both Colusa grass and succulent owl's clover are federally listed as threatened, state listed as endangered, and are considered rare and endangered (List 1B) by the California Native Plant Society (Skinner and Pavlik 1994). In the Atwater area, Colusa grass is known to exist only in vernal pools at Castle Airport. The species was observed in vernal pools at the airport during surveys in 1993 for the base closure, but was not relocated during surveys in 1994 (Department of the Air Force 1994). Succulent owl's clover is also only known to occur in several vernal pools at Castle Airport. This species was observed growing in these vernal pools during surveys at the Airport in the spring of 1998 (Preston pers.comm.). However, specific information regarding the exact location of this species at Castle Airport could not be obtained.

Twenty-one special status wildlife species have the potential to occur in the Atwater Planning Area. Five special status wildlife species have been observed in or near the Planning Area. They are vernal pool fairy shrimp, Molestan blister beetle, western burrowing owl, loggerhead shrike, and tricolored blackbird. Suitable habitat exists in the Planning Area for an additional 16 special status wildlife species: Conservancy fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, California tiger salamander, western spadefoot toad, California red-legged frog, northwestern pond turtle, southwestern pond turtle, California horned lizard, giant garter snake, white-tailed kite, northern harrier, Swainson's hawk, Fresno kangaroo rat, San Joaquin pocket mouse, and San Joaquin kit fox.

GOAL CO-6. Minimize impacts of development on wildlife and wildlife habitat, particularly special status species.

Policy CO-6.1. Consider opportunities for habitat preservation and enhancement in conjunction with public facility projects, particularly parks and storm drainage facilities.

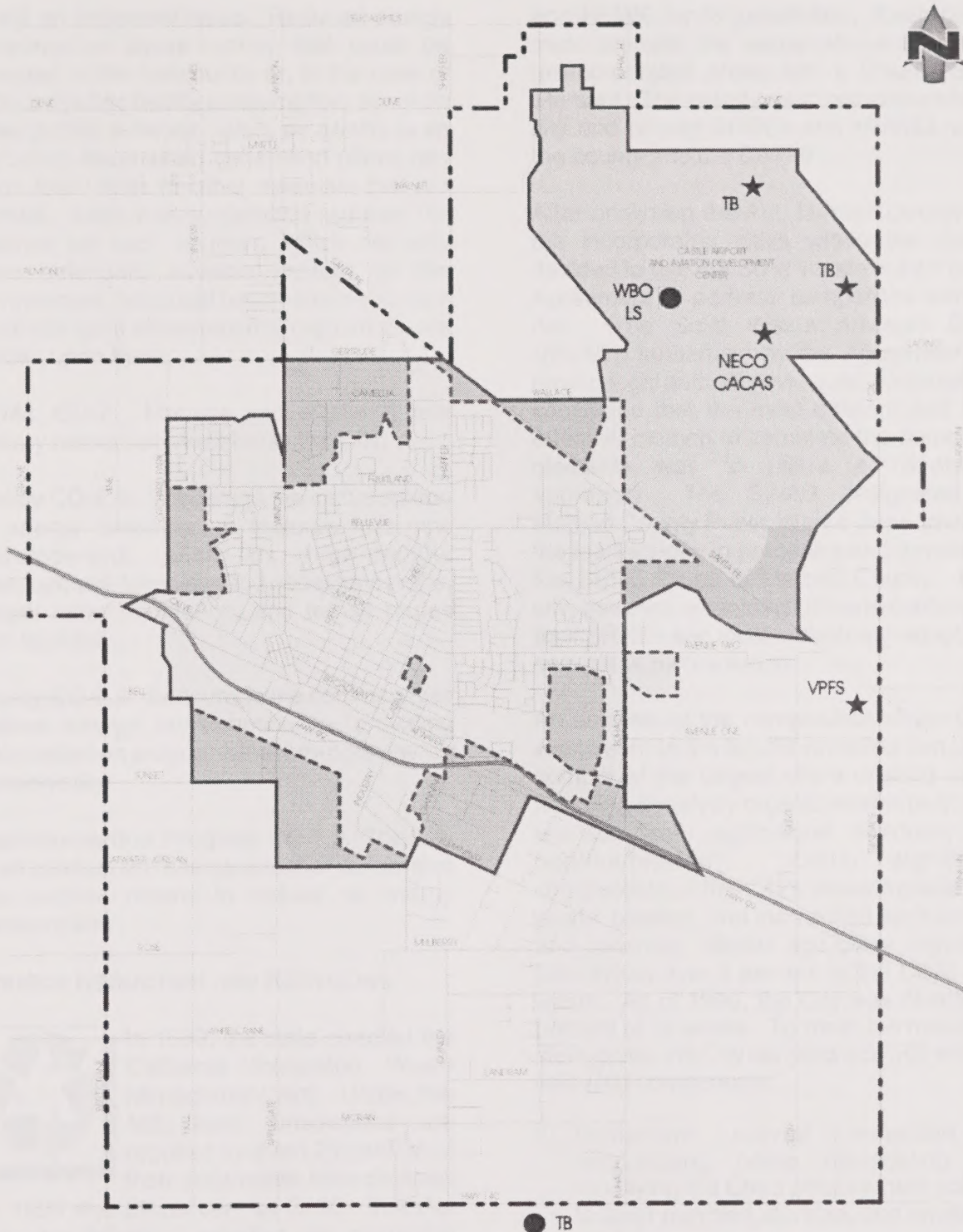
Policy CO-6.2. Encourage the preservation of corridors between natural habitat areas to allow for the movement of wildlife and to prevent the creation of "biological islands."

Implementation Program CO-6.a. When new development or redevelopment activities are proposed in locations with the potential for special status species to occur, require the project applicant to submit a report by a qualified biologist addressing the presence or absence of any special status species on the development site. The report shall include recommendations for avoiding or minimizing impacts on any special status species or habitat found to be present.

ENERGY RESOURCES AND CONSERVATION

Electrical and natural gas service has been provided to the City by Pacific Gas & Electric (PG&E), primarily from fossil fuel and hydroelectric sources. According to the City's 1992 General Plan, future supplies were anticipated to be adequate, and no transmission problems were foreseen.

At the CAADC site, electrical service, including maintenance, is provided by the Merced Irrigation District (MID). Electricity from MID is generated by the McSwain and New Exchequer Dams in Mariposa County. MID is pursuing a larger role in the provision of electricity to the eastern part of Merced County. In 1996, it built the Pioneer Substation and began delivery of retail electric power with service to the Foster Farms plant in Livingston. MID has prepared an Electric Utility Development Plan to extend electrical service to Livingston, Atwater, and Merced. The plan calls for the expansion of the Pioneer Substation to provide service to other Livingston customers and to serve as a base for a 115 kilovolt line extension to Atwater and Merced. Line extensions are proposed to eastern and western Atwater and Castle Airport, among other places. Proposed substations in Atwater and Castle will be built as required. While energy supplies for the City appear to be adequate for the immediate future, energy conservation



LEGEND:

Special-Status Wildlife Species

- LS** Loggerhead Shrike (*Lanius ludovicianus*)
TB Tricolored Blackbird (*Agelaius tricolor*)
VPFS Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)
WBO Western Burrowing Owl (*Athene cunicularia hypugae*)

Special-Status Plant Species

- CACAS** *Castilleja Canadensis* ssp. *Succulenta* (Succulent Owl Clover)
NECO *Neostaphia Colusana* (Colusa Grass)
 ● Known Location Within 1/2 Mile Radius
 ★ Known Location Within 1 Mile Radius

is still an important issue. Reduced energy consumption saves money that could be invested in the community or, in the case of reduced public facility consumption, spent on other public services. Also, air quality is an important issue when generation plants rely upon fossil fuels or other materials that are burned. Less energy demand reduces the reliance on such sources, which not only have potentially adverse impacts on the environment, but could become more costly if more stringent environmental regulations are placed upon them.

GOAL CO-7. Manage and efficiently use energy resources available to the City.

Policy CO-7.1. Encourage the incorporation of energy conservation features into new development, such as high-density development, bikeways and pedestrian paths, proper solar orientation, and transit routes and facilities.

Policy CO-7.2. Encourage the community to reduce energy consumption by providing information on programs that promote energy conservation.

Implementation Program CO-7.a. The City shall conduct an "energy audit" of its facilities and explore means to reduce its energy consumption.

SOURCE REDUCTION AND RECYCLING



In 1989, the state enacted the California Integrated Waste Management Act. Under this Act, local jurisdictions are required to divert 25 percent of their solid waste from disposal by 1995 and 50 percent by 2000. The Act sets the following priorities for promoting integrated waste management: diversion through source reduction, diversion through recycling and composting, environmentally safe transformation, and environmentally safe land disposal.

Each city in California must prepare a SRRE

and HHWE for its jurisdiction. Each county must prepare the same elements for the unincorporated areas and a County Siting Element. The county must also assemble all city and county SRREs and HHWEs within the county into the CIWMP.

After analyzing the Act, Merced County and the incorporated cities within the County decided to use the Solid Waste Joint Powers Agreement to address compliance with the Act. The Solid Waste Advisory Board (SWAB), authorized by the Agreement and having legal authority over solid waste issues, concluded that the most efficient and cost-effective method to complete the mandatory elements was to utilize a countywide approach. The SWAB designated the Merced County Public Works Department as the lead agency in preparing and developing the SRRE for all of Merced County. Each city, however, maintains ultimate control over their SRREs and must individually adopt their own plans by resolution.

An analysis of the composition of the City's waste sent to the landfill revealed that paper comprised the largest share of solid waste, following closely by organic wastes (e.g., food wastes, tires, agricultural residues, and textiles/leather). Other significant components of the City's waste include yard waste, plastics, and inert solids such as rock and concrete. Metals and glass comprised just slightly over 5 percent of the City's solid waste. As of 1990, the City was diverting 4 percent of its waste. To meet the mandated state goals, the City adopted a SRRE with the following components:

- 1) Implement *source reduction* by encouraging home composting and modifying the City's procurement policies to favor recycled, durable, and repairable products.
- 2) Participate in a regional *recycling* program that will include a mobile drop off facility, buyback/drop off facilities for individuals and business that wish to presort and sell recyclable materials, a material recovery facility (MRF) at the landfill, and source-separated residential collection of

newspaper and corrugated cardboard.

- 3) Participate in a regional *composting* facility that produces a soil enhancement product, using green wastes from self-haulers and residential collection.
- 4) Recover *special wastes* by recycling tires or by using them as paving material, and by recovery of "white goods" (e.g. large appliances) at the landfill.
- 5) Initiate an education and public information program to increase awareness of the importance of source reduction and recycling and of the means to implement these programs.

Implementation of the components of the City's SRRE has been slow. In part, this has been because the City is participating in a regional approach to meeting the state's waste reduction goals, an approach that has received the state's approval. Recycling programs in the City are conducted on a voluntary basis, with no mandatory source separation (Jerry Lawrie, pers.comm.).

The City has adopted the HHWE element prepared by Merced County, an element that applies to both the incorporated and unincorporated regions within the County. Examples of household hazardous waste include household cleaners, aerosols, solvents and thinners, and automobile fluids. The Merced County HHWE proposes the establishment of a permanent collection site at the Highway 59 landfill and temporary collection sites within or adjacent to the incorporated cities, with two vehicles to transport the waste from the temporary collection sites to the permanent site. Another component is a load checking program at both County landfills, to monitor the quantity of household hazardous waste entering the normal solid waste stream. The Merced County Association of Governments (MCAG) will implement an educational program to promote public awareness and participation in the safe use, storage, and disposal of household products that are potential hazards.

GOAL CO-8. Strive to meet or exceed the waste diversion and reduction goals

established by Public Resources Code Section 41780.

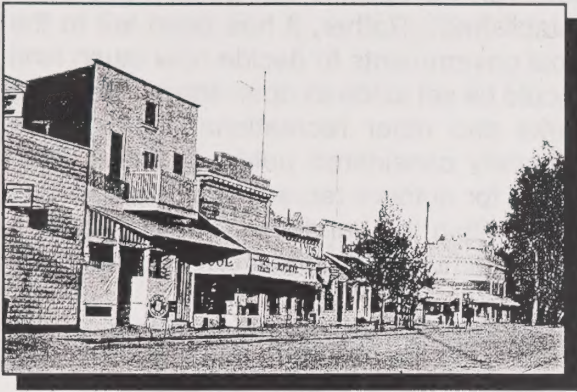
Policy CO-8.1. Continue to implement all components of the adopted Source Reduction and Recycling Element.

ARCHAEOLOGICAL, HISTORIC AND CULTURAL RESOURCES

Only a small fraction of Merced County has been surveyed for archaeological or historic cultural resources. Areas containing these resources are often located near natural waterbodies and on elevated grounds.

Original occupation of the San Joaquin Valley has been established as occurring 11,000 years before the present. At the time of European contact, the Planning Area was occupied by the Northern Valley Yokuts, a linguistically and geographically distinct division of the larger Yokuts group which lived in the San Joaquin Valley and the Sierra Nevada foothills south of the Fresno River. As many as 41,000 Yokuts may have lived in their homeland before disease and invasions by people of European descent reduced their numbers. According to the Castle Reuse Plan EIS, six cultural resource surveys have been conducted within a one-mile radius of the CAADC site, but only one cultural resource has been recorded. CA-MER-254H, consisting of a historic trash scatter, a chert flake, and a possible mano fragment, is located north of the CAADC site on the bank of Canal Creek.

Spanish missionary expeditions explored the area in the early 1800s, but no settlements were founded. American settlers appeared with the stage coach in the 1850s and began growing wheat and raising cattle. By the 1870s, the extension of the Central Pacific Railroad encouraged development, and the agricultural base began to diversify.



Downtown Atwater in the early 1900s.

Two men have had the greatest influence on Atwater history - John Mitchell and Marshall Atwater. John Mitchell eventually acquired up to a half million acres of land, which he leased out for dry-farming various grains. Upon his death, Mitchell left his estate to the families of three of his nieces. The families formed the company that would lay out the City. Marshall Atwater was a prominent tenant farmer on Mitchell land who later purchased a large tract of land and settled near present-day Atwater. Atwater persuaded the Central Pacific Railroad to place a switch and spur line to his grain warehouse, north of present-day Atwater Boulevard. The community grew and eventually incorporated in 1922. In 1941, Castle Air Force Base was constructed and later became the home of the Strategic Air Command 93rd Bombardment Wing.

Places of contemporary historical significance within the Atwater city limits include the Bloss Mansion, Bloss Library, and Castle Air Museum. George Bloss, Jr. was the son of one of the Mitchell heiresses. The Bloss family played a key role in Atwater history and made many contributions to the community, including a hospital and high school scholarships. The Castle Air Museum houses historic aircraft and remodeled World War II barracks. It attracts approximately 120,000 tourists annually.

GOAL CO-9. Protect and enhance historical and culturally significant resources within the Planning Area.

Policy CO-9.1. Ensure consideration and proper handling of prehistoric, cultural, and archaeological resources during the development process.

Policy CO-9.2. Preserve and maintain structures and features identified as historically significant by the City, including but not limited to, the Bloss Mansion and Bloss Library.

Policy CO-9.3. Encourage public and private efforts to identify, preserve, protect, and/or restore historic buildings, structures, landmarks, and important cultural resources.

Implementation Program CO-9.a. Attach the following standard condition to all discretionary development projects: "If a previously unknown archaeological site is uncovered during in the course of development, all development activity in the vicinity of the site shall cease until a qualified archaeologist completes an investigation. The archaeologist shall submit a report to the City that includes a determination of the significance of the site and recommendations on its disposition. "

SCENIC RESOURCES

The Atwater area is largely devoted to agricultural uses. As such, the open space areas associated with this specific land use offer added benefits as scenic resources. The City has designated the following routes as scenic corridors:

- Atwater Boulevard
- First Street
- Bellevue Road
- Shaffer Road
- Winton Way
- Broadway from Winton Way to First Street
- Buhach Road
- Third Street
- Part of Grove Avenue
- All entrances to the City

City policy aims to protect and beautify these

Open Space and Conservation Element

streets with specific policies regulating signs, utility lines, land use, and other activities which would detract from the aesthetic value of these corridors. Also, the City encourages actions that enhance the scenic value of these corridors, such as landscaping, maintenance, and architectural design.

GOAL CO-10. Enhance and protect the scenic resources within the City.

Policy CO-10.1. Utilize landscaping and other features to enhance and beautify major streets and gateways into and through the City.

Policy CO-10.2. Avoid excessive signage and other features which could detract from the scenic quality of prominent circulation routes.

Implementation Program CO-10.a. Explore the use of redevelopment financing to beautify streets and gateways within the Redevelopment Project Area.

Implementation Program CO-10.b. Identify and pursue other funding sources which could be used to beautify streets and gateways outside of the Redevelopment Project Area.

HARBORS AND FISHERIES

Under state law, the Conservation Element is required to discuss harbors and fisheries. There are no harbors or commercial fisheries within the Planning Area. Due to the limited amount of waterways in the vicinity, any fishing conducted in the Planning Area is primarily of a recreational nature.

OPEN SPACE FOR RECREATION

Recreational lands are different from other open space lands by their availability for public access and direct recreational uses. State law and policies, as expressed particularly in the requirements for the Open Space Element of the General Plan, promote the retention of open space for recreational purposes. Beyond the general requirements,

however, no specific standards have been established. Rather, it has been left to the local governments to decide how much land should be set aside as open space. Because parks and other recreational features are generally considered public facilities, open space for outdoor recreation is discussed in detail within the Land Use, Public Facilities, and Community Infrastructure Element.

OPEN SPACE FOR PUBLIC SAFETY

The Open Space Element is required to address any open space considered necessary to maintain public safety. Typical hazards that are addressed in this manner include, but are not limited to, excessive slopes, areas susceptible to landslides, flood prone areas, earthquake fault zones, and areas with high wildland fire potential. Most of these issues do not apply to the Atwater Planning Area. Policies related to flood-prone areas are described within the Safety Element.

SAFETY ELEMENT

Introduction

The revised minimum number of public safety and safety services for the City of Alameda is based on an analysis of the law, the City's existing public safety services, and the needs of the City. The intent of the Safety Element is to provide a general framework for the City's public safety services, including the number, type, and quality of services, and the City's role in providing them.

The City's public safety services are provided by the City's Police Department, Fire Department, and Emergency Services Department. The City's public safety services are provided by the City's Police Department, Fire Department, and Emergency Services Department.

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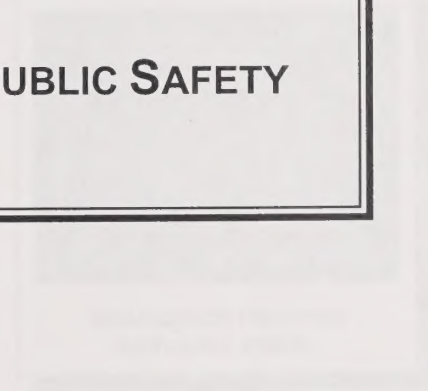
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5. SEISMIC AND PUBLIC SAFETY



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SAFETY ELEMENT

INTRODUCTION

This element addresses issues of public health and safety. Although the City of Atwater is located in an area where there are few obvious hazards, potential hazards do exist. The intent of the Safety Element is to document potential hazards that must be considered when making decisions on the location, type, and density of development. The main objective of this element is to avoid, to the maximum extent feasible, loss of life, injuries, and property damage due to natural or manmade hazards.

California Government Code Section 65302(g) requires a general plan to have a Safety Element for the protection of the community from any unreasonable risks associated with the effects of various potential hazards. Among these hazards are the following:

- Seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure.
- Slope instability leading to mudslides and landslides.
- Subsidence, liquefaction, and other seismic and geologic hazards.
- Flooding.
- Urban and wildland fires.

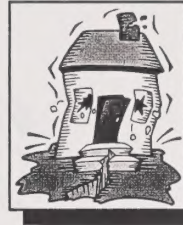
The Safety Element shall also address evacuation routes, peakload water supply requirements, and minimum road widths and clearances around structures.

In addition to the required items, this Safety Element discusses other potential hazards in the Planning Area - dust storms, hazardous materials, and hazards associated with Castle Airport operations. Also, "critical facilities" - facilities that are needed to function during

emergencies - are identified.

SEISMIC AND GEOLOGIC HAZARDS

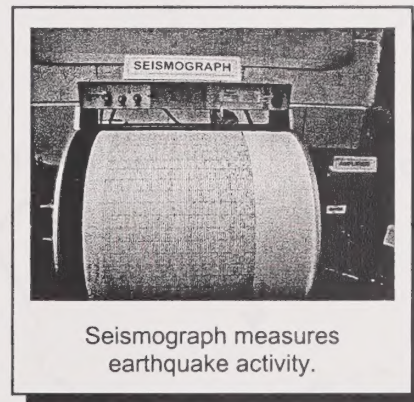
Seismic Hazards



As noted in Figure 5-1, no known faults are located in the Atwater Planning area. The nearest known fault is the Kings Canyon Lineament, approximately ten miles south of the City. Geological evidence indicates that this

fault has not been active within the past 1.6 million years. The closest significant mapped faults lie about 20 miles to the northeast in the Sierra Nevada and 30 miles to the southwest in the Diablo Range. The Bear Mountain Fault, the fault in the Sierra Nevada, has not been active in historic times, but there is evidence of activity within the past

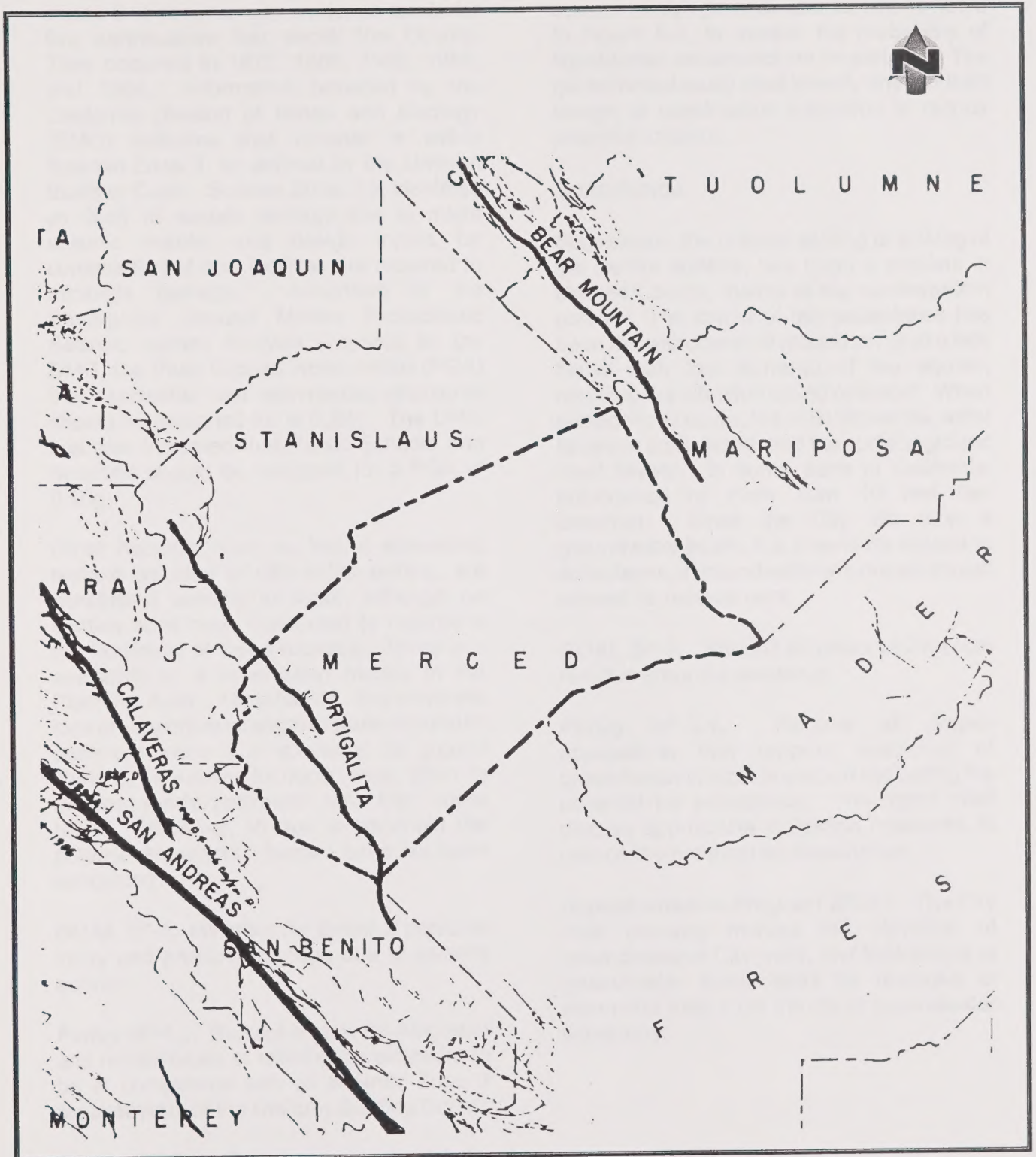
1.6 million years. Faults to the southwest include the San Joaquin and O'Neill Faults (both active within the last



Seismograph measures earthquake activity.

700,000 years) and the Ortigalita Fault. Farther to the west are the Calaveras Fault and the San Andreas Fault, both historically active faults whose earthquakes have been felt in Merced County. The nearest Alquist-Priolo Special Studies Zone is the Ortigalita Fault Zone in southwestern Merced County, about 38 miles from the City. While the Ortigalita Fault has not been active in historic times, it apparently has been active within the last 10,000 years.

The most likely seismic hazard to be experienced by the City is ground shaking, caused by earthquakes generated on active



faults in either the Sierra Nevada or the Coast Ranges. The Merced County General Plan states that documentary evidence exists for five earthquakes that shook the County. They occurred in 1872, 1906, 1952, 1966, and 1984. Information provided by the California Division of Mines and Geology (DMG) indicates that Atwater is within Seismic Zone 3, as defined by the Uniform Building Code. Seismic Zone 3 is identified as likely to sustain damage due to major seismic events, and design inputs for construction of new facilities are required to minimize damage. According to the Earthquake Ground Motion Probabilistic Seismic Hazard Analysis prepared by the DMG, the Peak Ground Acceleration (PGA) that residential and commercial structures should be designed for is 0.22g. The DMG has also indicated that Public Schools and hospitals should be designed for a PGA of 0.26g.

Other hazards, such as lateral spreading, surface cracking or differential settling, are considered unlikely to occur, although no studies have been conducted to determine the likelihood of these hazards. There is a possibility of a liquefaction hazard in the Planning Area. Liquefaction, the complete loss of supportive strength of water-saturated sediment when it is subjected to ground shaking, is known to occur most often in uniform sandy sediments with high water tables. However, studies to ascertain the potential liquefaction hazard have not been conducted.

GOAL SF-1. Minimize the threat of personal injury and property damage due to seismic activity.

Policy SF-1.1. Require all new development and rehabilitation of existing development to be in compliance with all Seismic Zone 3 requirements of the Uniform Building Code.

GOAL SF-2. Reduce the potential for property damage and injury resulting from liquefaction.

Policy SF-2.1. Require a geotechnical study for all projects located in areas that are subject to high groundwater tables, as noted in Figure 5-2, to assess the probability of liquefaction occurrence on project site. The geotechnical study shall identify any required design or construction mitigation to reduce potential impacts.

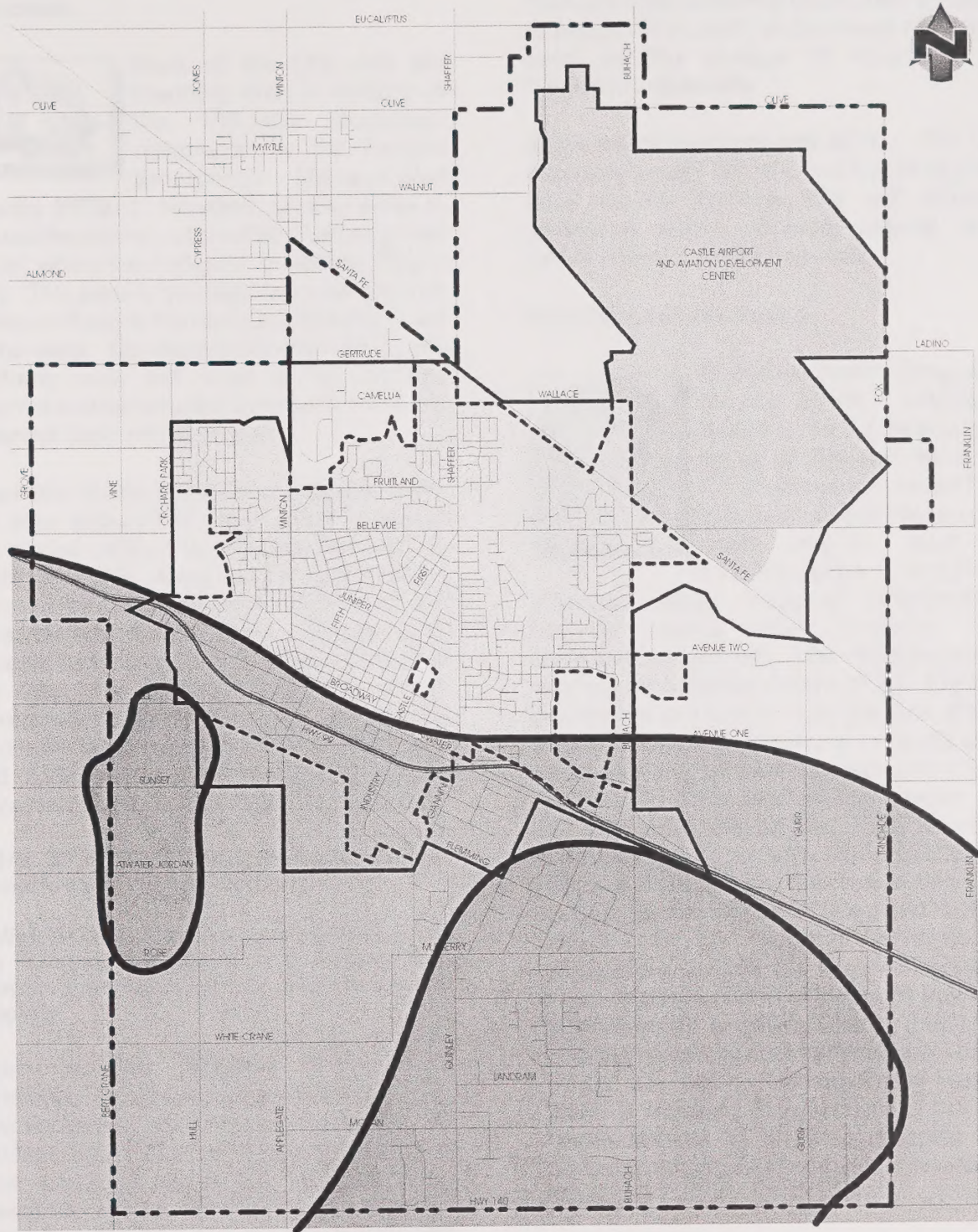
SUBSIDENCE

Subsidence, the gradual settling or sinking of the earth's surface, has been a problem in Merced County, mainly in the southwestern portion. The cause of this subsidence has been the withdrawal of ground water at a rate faster than the recharge of the aquifer, resulting in a situation called overdraft. When subsidence occurs, the soils above the water table are compacted, and the surface ground level lowers. In some parts of California, subsidence of more than 10 feet has occurred. Since the City sits atop a groundwater basin, it is potentially subject to subsidence, if groundwater withdrawal should exceed its replacement.

GOAL SF-3. Prohibit activities which could result in ground subsidence.

Policy SF-3.1. Require all project applications that propose extraction of groundwater to include a report evaluating the potential for subsidence. The report shall discuss appropriate mitigation measures to reduce the potential for subsidence.

Implementation Program SF-3.a. The City shall annually monitor the elevation of groundwater at City wells, and fluctuations in groundwater levels shall be recorded to determine long-term trends in groundwater elevations.



LEGEND:

- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- 0 - 5 Feet
- 5 - 10 Feet

 **Castle Airport & Aviation Development Center**

FLOODING



Most of the City and the Planning Area lie outside of the 100-year floodplain designated by the Federal Emergency Management Agency (FEMA). However, several areas in the southeastern portion of the Planning Area do fall within the 100-year floodplain (Figure 5-3). This area is bounded approximately by Bellevue Road to the north and Buhach Road to the west. Development within the Castle Parkway area will have to be carefully planned and constructed in order to avoid any potential flood-related impacts.

In addition to Black Rascal and Bear Creeks, the area adjacent to Canal Creek is one of the places subject to possible flooding. In 1992, the U.S. Army Corps of Engineers constructed Castle Reservoir, a flood control reservoir on Canal Creek (Figure 5-4). Located approximately four miles northeast of the City, the reservoir has a maximum storage capacity of 10,400 acre-feet, and it is held back by an earthen dam 52.5 feet high and 2,250 feet long at its crest. Castle Reservoir is the closest reservoir to the City.

GOAL SF-4. Avoid damage to persons and property resulting from flooding.

Policy SF-4.1. Restrict development within the 100-year floodplain in a manner that effectively prevents damage to persons and property.

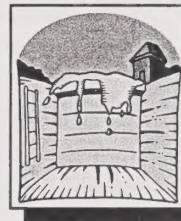
Implementation Program SF-4.a. As conditions for development within the 100-year floodplain, the City shall require that the finished floor elevation of the project be at least one foot above the 100-year flood elevations shown on the Flood Insurance Rate Map. The project applicant shall also be required to demonstrate that the project would not impact other properties or significantly contribute to a cumulative impact.

Implementation Program SF-4.b. The City shall prohibit any land use activities within the

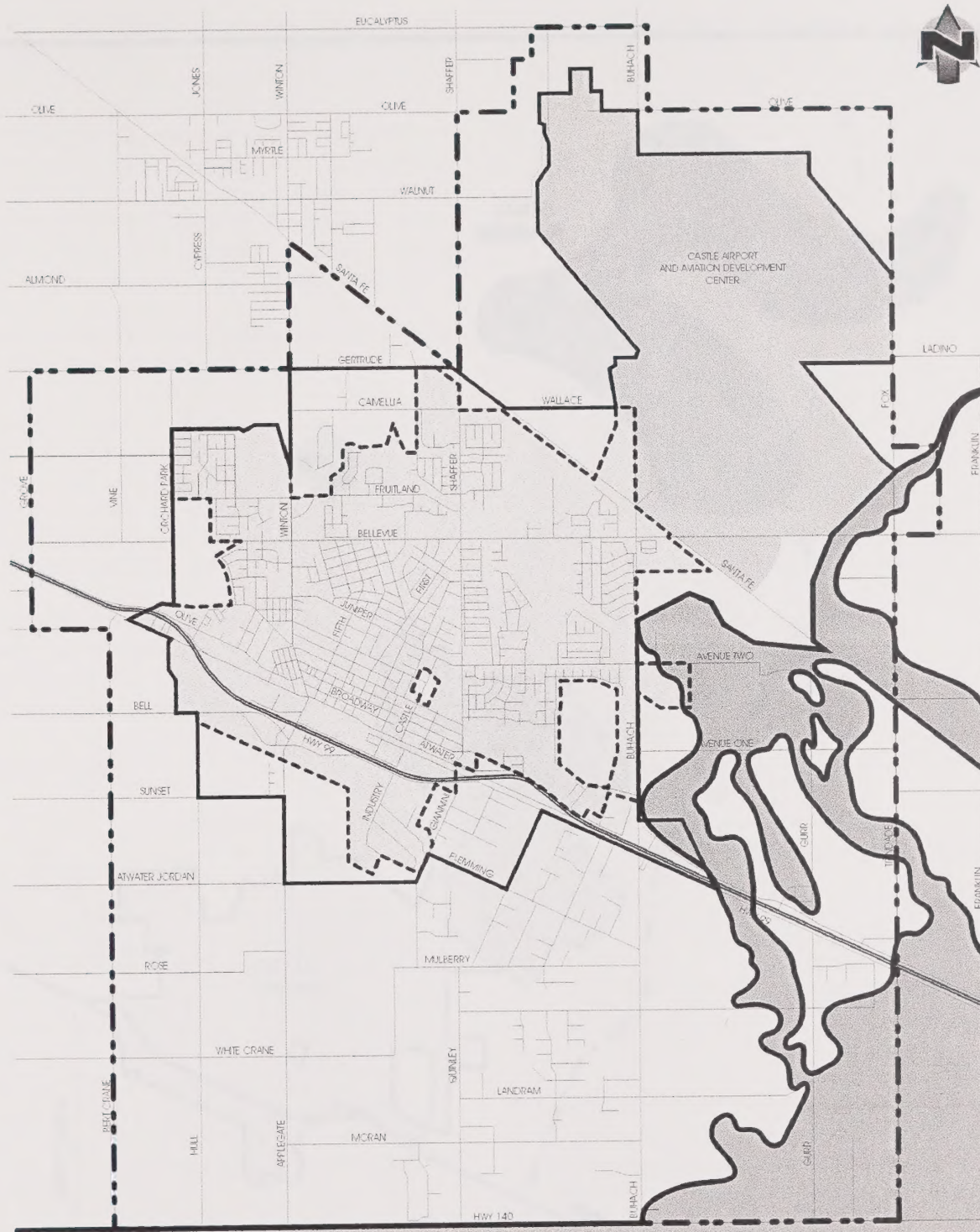
100-year floodplain that could pose a hazard to people or property in the event of a flood, such as the storage of flammable or hazardous materials.

Implementation Program SF-4.c. The City shall encourage the construction of regional flood control facilities that will increase protection and/or eliminate existing flood zones within the Planning Area.

DAM INUNDATION AREAS



Protection from flood hazards created by dam failures is critical to the safety and well-being of Atwater residents. Dam failures can result from a number of natural or man-made causes, such as earthquakes, erosion, improper siting, improper maintenance, rapidly rising flood waters and structural/design flaws. The ability to provide warning for potential victims of flooding from dam failure is influenced by the type of dam constructed, the frequency of inspections for structural integrity, the flood wave arrival time, the ability to notify persons downstream and their ability to evacuate. Aside from loss of life, damage to property and displacement of people, hydroelectric facilities on dams that fail would suffer damage. This could have an impact on life support systems in communities outside the immediate hazard areas. A failure of one of the dams operated by the Merced Irrigation District (MID) that generate electricity could affect supply to the CAADC site, within which the Castle Medical Center is located. Should more of the City choose MID as its electricity supplier and distributor, those customers would likewise be affected.



LEGEND:

- Project Study Limits
- - - Atwater City Limits

- Sphere of Influence (1984)
- 100 Year Flood Area

Castle Airport & Aviation Development Center

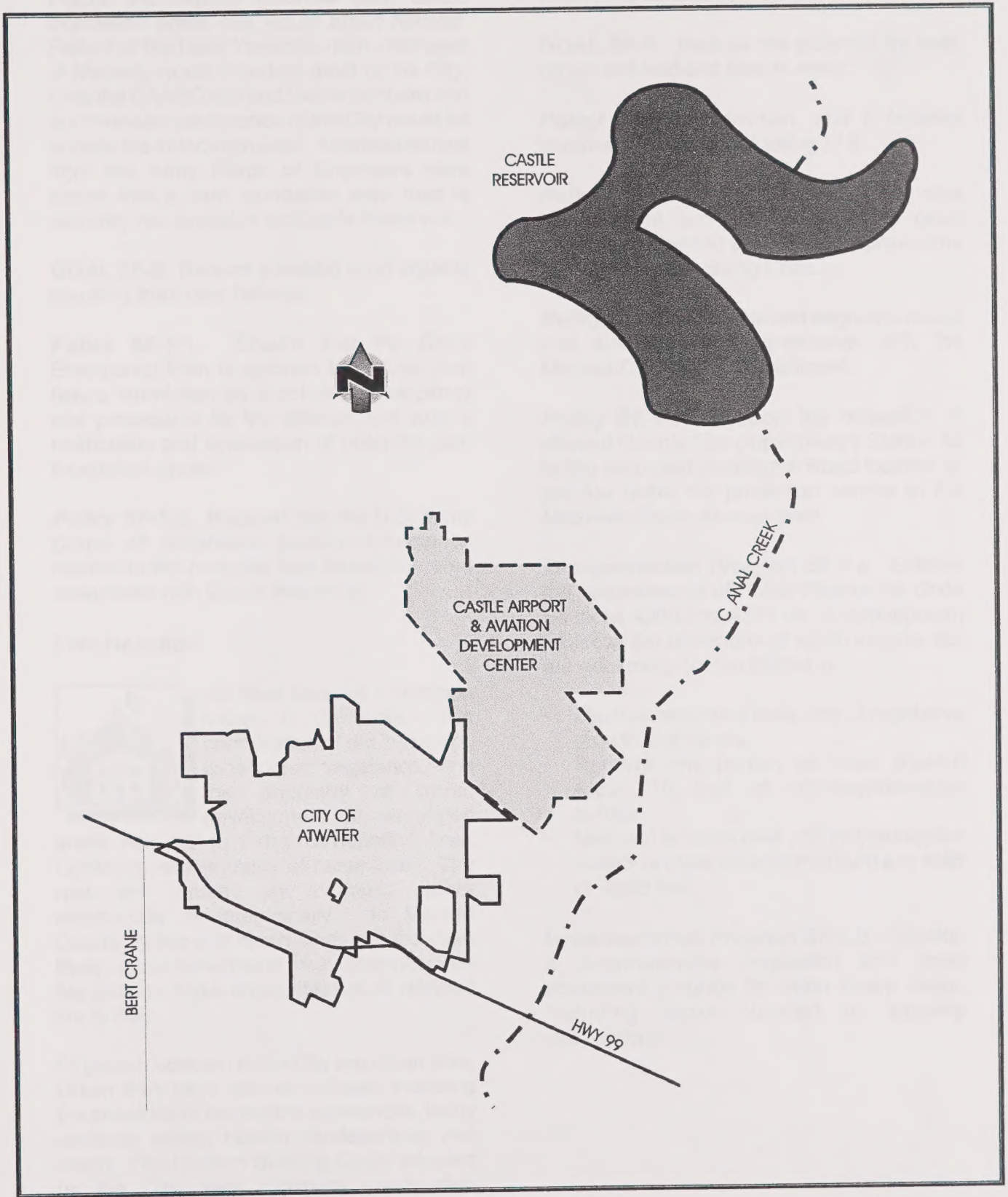


Figure 5-5 depicts potential dam failure inundation areas that would affect Atwater. Failure of the Lake Yosemite dam, northeast of Merced, would inundate most of the City. Only the CAADC site and the far northern and northwestern peripheries of the City would be outside the inundation area. Representatives from the Army Corps of Engineers have stated that a dam inundation area map is currently not available for Castle Reservoir.

GOAL SF-5. Reduce potential flood impacts resulting from dam failures.

Policy SF-5.1. Ensure that the City's Emergency Plan is updated to include dam failure inundation as a potential emergency and procedures for the efficient and orderly notification and evacuation of potential dam inundation areas.

Policy SF-5.2. Request that the U.S. Army Corps of Engineers provide information relative to the potential dam inundation area associated with Castle Reservoir.

FIRE HAZARDS



Wildland fires are a common hazard in California. The combination of dry summers, widespread vegetation, and the proximity of urban development to vegetated areas has led to many devastating fires. Lightning causes many of these fires. The rest are caused by humans, either accidentally or intentionally. In Merced County, grass and brush lands are the most likely places for wildland fires. Since Atwater lies outside these areas, the risk of wildland fire is low.

Of greater concern to the City are urban fires. Urban fires have several causes, including the presence of flammable substances, faulty electrical wiring, human carelessness, and arson. The Uniform Building Code, adopted by the City, sets minimum construction standards to ensure fire safety. In addition, activities that use flammable or explosive materials are subject to more stringent safety

requirements to prevent fires.

GOAL SF-6. Reduce the potential for both urban and wildland fires to occur.

Policy SF-6.1. Maintain, and if feasible improve, the City's ISO rating of 5.

Policy SF-6.2. Ensure that all new development and redevelopment of older projects conform to the fire safety provisions of the Uniform Building Code.

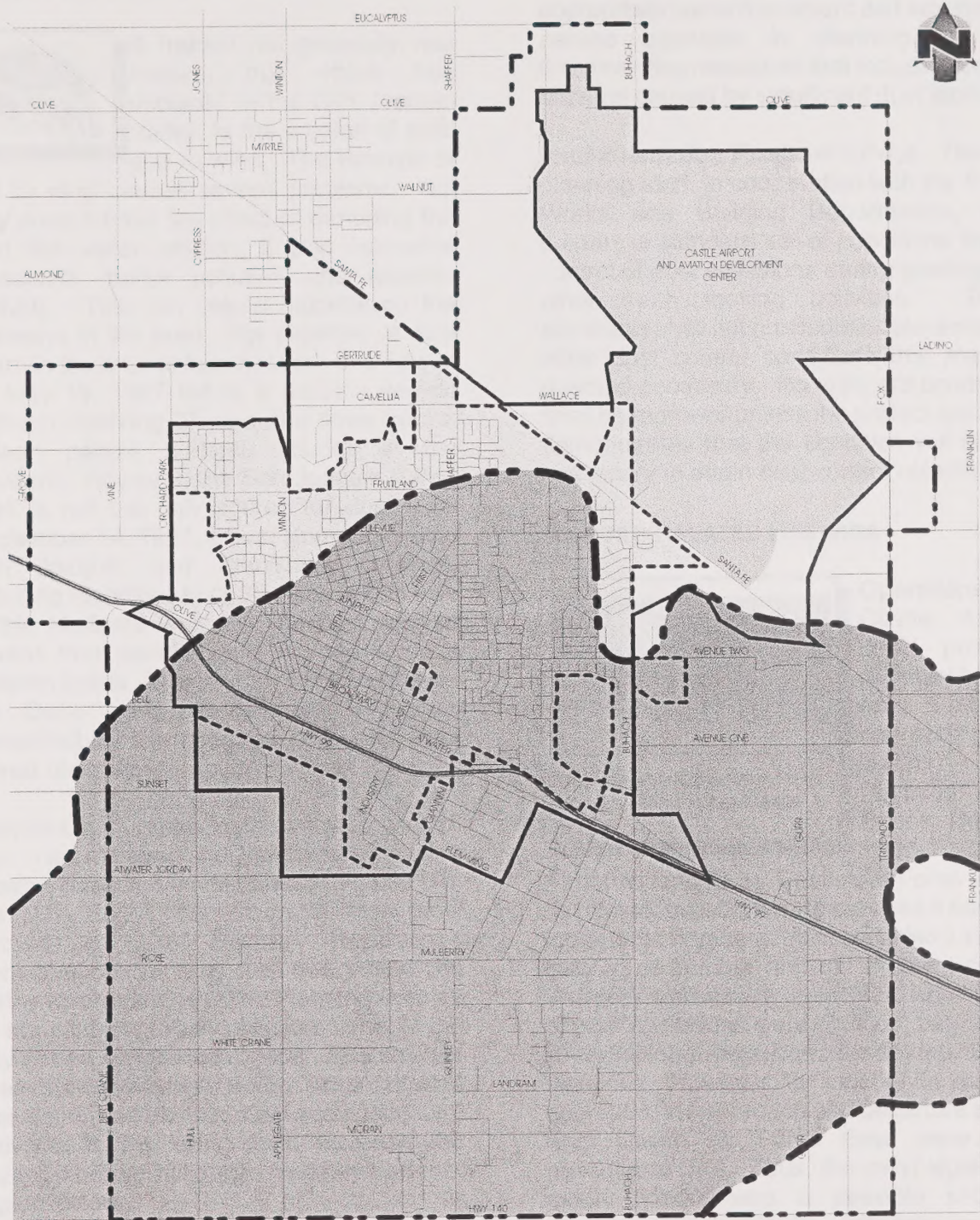
Policy SF-6.3. Maintain and augment mutual and automatic aid agreements with the Merced County Fire Department.

Policy SF-6.4. Support the relocation of Merced County Fire Department's Station 82 to the proposed Applegate Road location to provide better fire protection service to the McSwain-South Atwater area.

Implementation Program SF-6.a. Enforce the requirements of Public Resources Code Sections 4290 and 4291 on all development projects, the provisions of which include, but are not limited to, the following:

- Maintain structural roofs free of vegetative growth and debris.
- Remove any portion of trees growing within 10 feet of chimney/stovepipe outlets.
- Maintain screens over chimney/stovepipe outlets or other devices that burn any solid or liquid fuel.

Implementation Program SF-6.b. Develop a comprehensive vegetation and weed abatement program for open space areas, including those located in existing subdivisions.



LEGEND:

- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- Lake Yosemite



Castle Airport & Aviation
Development Center

WIND EROSION AND DUST STORMS



A hazard not generally well known, but which has occurred in the San Joaquin Valley, is the erosion of soils due to wind. The removal of soil by wind causes several problems. Not only does it have the effect of denuding the land like water erosion, it also increases particulate matter pollution and reduces visibility. This can create hazards on the highways in the area. For example, a dust storm in the area between Selma and Fowler on May 19, 1997 led to a multiple vehicle collision involving 27 cars and three trucks. Fifteen people suffered injuries in the accident. However, the San Joaquin Valley itself is not the only source for dust. On September 14, 1997, a dust storm blanketed San Joaquin and Stanislaus counties, reducing visibilities from 30 miles to one mile at the Modesto Airport. The dust was so severe that people were warned to take children inside. The source of this storm was the Delta area, where northerly winds generated by the passage of a cold front stirred up dust.

Activities by humans, such as the plowing of land, can increase the likelihood of a wind erosion hazard. As depicted in Figure 5-6, the U.S. Soil Conservation Service (now known as the Natural Resources Conservation Service) has designated the northwestern portion of the Planning Area as an area subject to wind erosion. Most of the City sits on Atwater sandy soil. This soil has been rated as having a severe hazard of wind erosion. Urban development and agricultural activities in the area could increase the hazard if proper mitigation measures are not implemented.

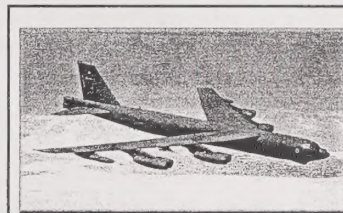
GOAL SF-7. Prevent activities that contribute to increased wind erosion.

Policy SF-7.1. Require all projects that involve grading or other earth moving activities to implement dust control measures to reduce dust emissions.

Policy SF-7.2. Cooperate with other appropriate law enforcement and emergency service agencies in planning for and implementing measures that reduce potential hazards caused by significant dust storms.

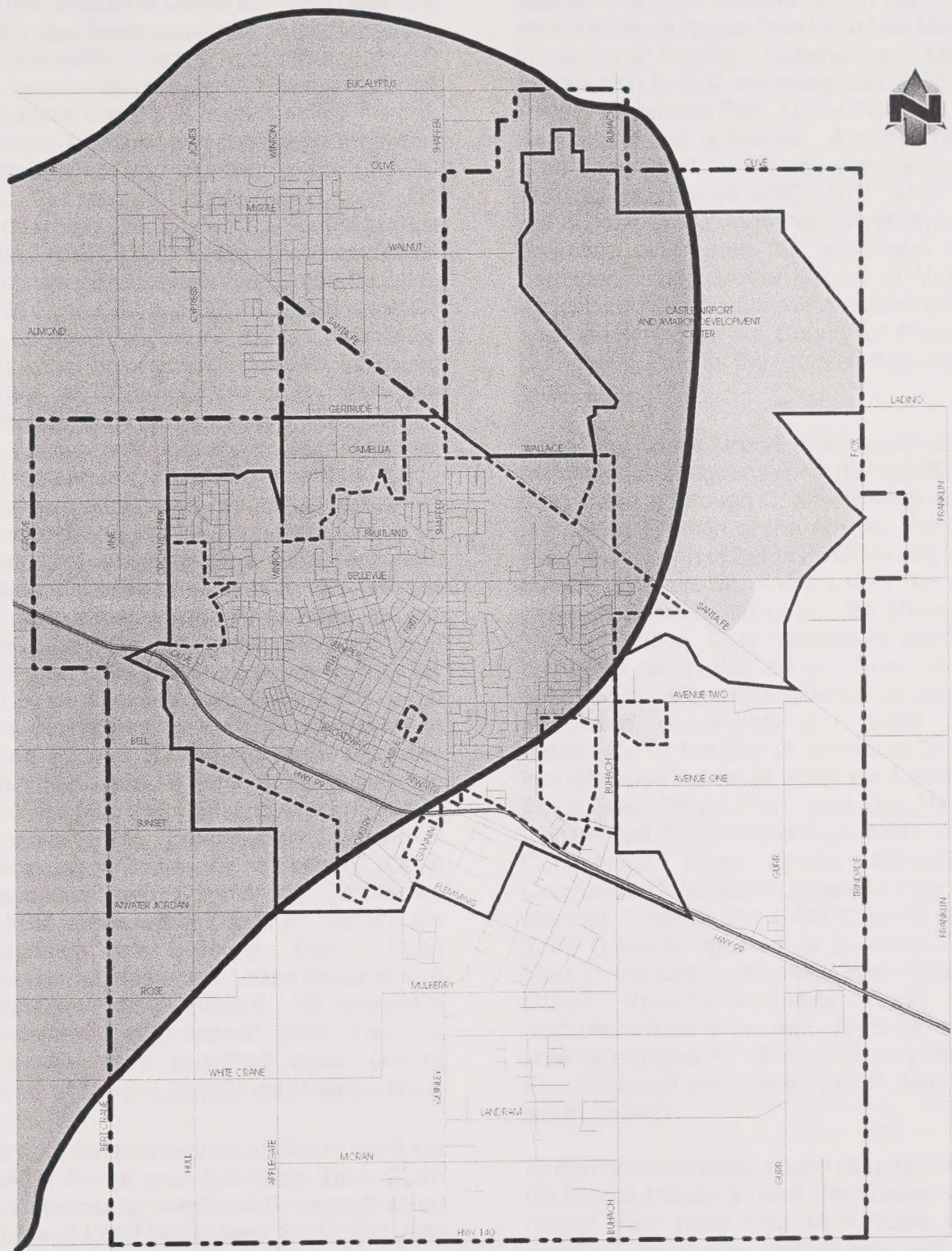
Implementation Program SF-7.a. The City planning staff, in cooperation with the Public Works and Building Departments, shall prepare a standard set of conditions for the control of dust emissions during grading and other earth moving activities. These standards shall not preclude the placement of other dust control conditions that may be deemed necessary. No standard conditions shall be removed unless the project applicant demonstrates that the condition will not be necessary to attain dust control objectives.

AIRPORT-RELATED HAZARDS



B52 Bomber of the type formerly stationed at Castle AFB

Operations at Castle Airport could pose a potential hazard to future development within the Planning Area. Prior to October 1995, Castle Airport operated as Castle Air Force Base. Its primary mission was to serve as a base for long-range bombers, but it was also a site for training of bomber and air refueling crews. The potential hazards associated with military aircraft operations were obvious, particularly since the long-range bombers carried nuclear weapons. However, for most of its years of operation, the approach and departure zones from Castle Air Force Base were over agricultural land. Thus, the most significant safety hazard was a possible accident involving an aircraft carrying nuclear weapons. During the years of the base's operation, there were no accidents that threatened the safety of people or property within the City.



LEGEND:

- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- Areas Subject to Wind Erosion



Castle Airport & Aviation Development Center

With the closure of Castle Air Force Base, the facility has been converted to civilian uses, and the safety hazard from military aircraft has largely disappeared. However, airport operations could still pose a safety hazard, mainly to industrial and commercial activities located within and adjacent to the CAADC site. The Merced County Airport Land Use Compatibility Plan places the central portion of the CAADC site and lands to the southeast which are generally north of Santa Fe Drive within Zones B1 and B2. Zones B1 and B2 are approach/departure zones. Prohibited uses within these zones include aboveground storage of hazardous materials, children's schools and day care centers, libraries and other highly noise-sensitive uses, hospitals, and nursing homes. Also, hazards to flight, which include physical, visual, and electronic forms of interference with the safety of aircraft operations, are prohibited in these zones. Residential uses are limited to one unit per five acre parcel in Zone B1 and one unit per acre in Zone B2. Population concentrations are limited to 25 persons per acre in Zone B1 and 50 persons per acre in Zone B2. Land uses designated by the City of Atwater in Zones B1 and B2 include those indicated within the Castle Air Force Base Reuse Plan Land Use Map as Airport and Airport Related, Business Park, Educational Commercial Recreation (Castle Air Museum), Open Space, and Visitor Commercial. Outside the CAADC, lands within Zones B1 and B2 are designated as Business Park, Urban Reserve/Business Park, Urban Reserve, and Agriculture/Area of Interest. No residential development is proposed other than the residential uses permitted under current County of Merced agricultural classifications.

The northeastern section of CAADC and the CAADC Fringe area are within Zone C, an area commonly overflowed by aircraft at an altitude of 1,000 feet or less. Prohibited uses include children's schools and day care centers, libraries, hospitals and nursing homes, and hazards to flight. Residential uses are limited to eight units per acre in Zone C. Population concentrations are limited to 100 persons per acre. Land uses designated by the City of Atwater in Zone C

include that area indicated within the Castle Air Force Base Reuse Plan Land Use Map as Correctional Facility. Outside the CAADC, lands within Zone C are designated as Urban Reserve/Business Park, Urban Reserve, and Agriculture/Area of Interest. A portion of the area designated by Merced County as the Franklin-Beachwood RRC/SUDP also falls within Zone C. No residential development is proposed other than the residential uses permitted under current County of Merced agricultural classifications and residential land uses permitted in the County of Merced's Community Plan for the Franklin-Beachwood area.

Zone D for Castle Airport, which covers areas overflowed less frequently or at higher altitudes than Zones A through C, affects lands within the eastern portion of the Atwater Planning Area, lands north of Santa Fe Drive which are outside of Zone B2, and most of the area between Santa Fe Drive and SR 99 east of Trinidad Road. Only hazards to flight are prohibited within this zone. There are no specified limitations for residential densities or population concentrations. Land uses designated by the City of Atwater in Zone D include those indicated within the Castle Air Force Base Reuse Plan Land Use Map as Commercial, Commercial Recreation, Visitor Commercial, Open Space, Educational Commercial Recreation, Business Park, and Medical. Outside the CAADC lands within Zone C are designated as Business Park, Medium Density Residential, Urban Reserve, Urban Reserve/Business Park, and Agriculture/Area of Interest. A portion of the area designated by Merced County as the Franklin-Beachwood RRC/SUDP also falls within Zone D.

As demonstrated above, land uses applied on the City of Atwater's Land Use Diagram and Reuse Plan Land Use Map, have been designed to ensure consistency with the Merced County Airport Land Use Compatibility Plan. Issues such as conformance with population concentration limitations or open space requirements will be addressed on a case by case basis as new development or redevelopment activities are

proposed.

GOAL SF-8. Avoid new incompatible development within established Airport Safety Zones.

Policy SF-8.1. Ensure that land use development in the area surrounding Castle Airport is consistent with the applicable provisions of the Merced County Airport Land Use Compatibility Plan.

Implementation Program SF-8.a. The City shall adopt the Primary Compatibility Criteria as outlined in Table 2A of the Airport Land Use Compatibility Plan and apply these criteria in the evaluation of projects proposed within the Castle Airport influence area.

HAZARDOUS MATERIALS



Hazardous materials consist of "injurious substances", which include flammable liquids and gases, poisons, corrosives, explosives, oxidizers, radioactive materials, and medical supplies and waste. These materials are either generated

or used by various commercial and industrial activities. Hazardous wastes are injurious substances that have been or will be disposed. Potential hazards arise from the transport of hazardous materials, including leakage and accidents involving transporting vehicles. Particular transportation routes of concern include State Highway 99 and the railroads. There also are hazards associated with the use and storage of these materials and wastes.

The California Department of Toxic Substances Control maintains the Hazardous Waste Information System, which keeps a record of hazardous waste generators in the state. Sixteen sites with Atwater addresses are listed in the state records. However, some of these sites are actually located outside the city limits. Some of the wastes include photochemical/photoprocessing waste, oil-containing wastes, and oxygenated

solvents.

The Merced County Health Department maintains a list of businesses that are state-regulated hazardous waste generators. There are 77 listed businesses that are in the Atwater area, with 18 of them located in the unincorporated area. The most frequently listed businesses are service stations, automobile repair shops, medical facilities and offices, manufacturing firms, and food processors.

The City of Atwater Emergency Plan outlines the responsibilities for the management of hazardous material incidents. For incidents that occur on roadways, the on-scene management responsibility rests with the primary traffic investigative authority. Incidents taking place at locations other than roadways, such as industrial plants, will be managed by the City's Fire Department. All City agencies will support and assist the appropriate agency in charge of response. The Chief of Police will develop a hazardous materials incident response plan supported by other agencies.

The CAADC site has been a place of particular concern for hazardous materials and waste. Past operations at Castle Air Force Base had commonly utilized aviation and motor fuels, motor oils and lubricants, hydraulic fluids, cleaning solvents, pesticides, paints and thinners. As of February 1995, 209 sites with soil contamination were identified for environmental remediation, of which 161 will require little or no action. Four sites were proceeding with remediation and another four are pending remediation. The remaining sites require further study before any decisions on cleanup are made. Hazardous sites are identified under the Air Force's Installation Restoration Program (IRP). There were 33 IRP sites at the former Castle Air Force Base, according to the Castle EIS. The Department of Defense will be responsible for the cleanup of these sites.

According to the Base Conversion Agency, a

Draft Final Record of Decision (ROD) for the remediation program at Castle was submitted to federal and state regulators with jurisdiction over the cleanup in October 1997. The ROD is a public document that explains what methods will be used to clean up the contaminated areas. After the ROD has been finalized, the full remediation program will be implemented.

GOAL SF-9. Prevent potential contamination and hazards resulting from the inappropriate storage, transport, and handling of hazardous materials.

Policy SF-9.1. Require new development projects which produce, store, utilize, or dispose of significant amounts of hazardous materials or waste to incorporate appropriate state-of-the-art project designs and building materials to protect employees and adjacent land uses.

Policy SF-9.2. Promote the routing of vehicles carrying potentially hazardous materials along transportation corridors that reduce the risk of exposure to the public and sensitive environmental areas.

Policy SF-9.3. Encourage continued monitoring of hazardous material cleanup at the CAADC site, and monitoring of hazardous material use or storage at the site.

Implementation Program SF-9.a. Require that applications for projects that will generate hazardous wastes or utilize hazardous materials include detailed information regarding the types and volumes of hazardous materials that will be involved and plans for hazardous waste reduction, recycling, and storage.

Implementation Program SF-9.b. Forward all proposed development projects which involve the manufacture, use, and/or storage of hazardous materials to the Merced County Environmental Health Department, to ensure that all appropriate business and emergency plans are required and any other special requirements or mitigation measures are incorporated into conditions of approval for

the project.

EMERGENCY PREPAREDNESS AND RESPONSE



Responsibility for day-to-day emergency response falls to the Atwater Police and Fire Departments, which are first responders in emergency situations. Under more extreme general emergency conditions, other City departments become involved, along with State, County, and private agencies as needed. Response procedures are described in the City of Atwater Emergency Plan, dated November 1984. The Emergency Plan is in the process of being updated.

GOAL SF-10. Ensure that adequate emergency vehicle access is provided to developed areas.

Policy SF-10.1. Require each residential subdivision over 50 units in size to have at least two points of access.

Policy SF-10.2. Continue to require all cul-de-sacs to have a length no greater than 600 feet and to have a sufficient turnaround area for emergency response equipment.

CRITICAL, SENSITIVE AND HIGH OCCUPANCY FACILITIES



The General Plan Guidelines define "critical facilities" as those "which either (1) provide emergency services or (2) house or serve many people who would be injured or killed in case of disaster damage to the facility. Examples include hospitals, fire stations, police and emergency services, utility facilities, and communications facilities." Although identification of critical facilities is not required by codes pertinent to the safety element, it serves a useful purpose. It singles out those facilities for which special maintenance plans and actions are necessary to ensure their ability to function during emergencies or to reduce the impairment of

services provided by these facilities. Within the Atwater Planning area, the following are considered critical facilities:

- Atwater Fire Department stations (Main and CAADC).
- Atwater Police Department building
- Atwater City Hall (colocated with Police Department).
- Merced County Fire Department Stations 82 (Atwater) and 88 (Winton).
- Water supply lines and wells.
- Wastewater treatment plant, pumping stations, and trunk lines.
- Major electrical transmission lines and substations.
- Major communication lines and microwave transmission facilities.

Critical facilities also include major roadways which may serve as principal evacuation routes. These are discussed in the evacuation route section below.

GOAL SF-11. Ensure that critical facilities are located and designed to remain functional during and after a seismic event.

Policy SF-11.1. Require all critical facilities to be designed or retrofitted in conformance with standards for Seismic Zone 3 in the Uniform Building Code (UBC).

Implementation Program SF-11.a. The City shall conduct an inventory of critical facilities to determine if any do not conform to the seismic safety standards in the UBC. The City shall notify any nonconforming facility that it must correct its deficiencies, and the City shall correct deficiencies found in its own facilities.

EVACUATION ROUTES



Evacuation procedures may be enacted following an overall situation assessment and evaluation of alternatives such as relocation, temporary facilities, and the establishment of "safety zones." When evacuation is determined to be necessary,

the most expedient routes would be identified by emergency officials. The populace would be notified and provided with information on evacuation routes. Additional transportation would be mobilized, and traffic control and direction would be provided as necessary.

Attachment B of the City's Emergency Plan identifies primary and secondary evacuation routes. Primary evacuation routes include Atwater Boulevard, Winton Way, Shaffer Road, Buhach Road, Santa Fe Drive, and Bellevue Road. Secondary routes include Juniper Avenue, Broadway and First, Third and Fifth Streets. Both railroad lines are identified as "barriers." No explanation is given as to what the term signifies, but presumably this designation was applied because potential blockage of evacuation routes by trains could occur. State Highway 99 carries the same designation, perhaps because of its limited access. However, the highway could also serve as a major evacuation route, depending upon the circumstances.

The location of an emergency incident will influence the choice of evacuation routes used. For example, a flood in the 100-year zone may close off Buhach Road, Santa Fe Drive, and State Highway 99. A hazardous material incident on State Highway 99 or the railroad tracks would close off these routes and any roads within the vicinity. Significant evacuation problems are not anticipated, since the local road system provides many alternative routes. One area of particular concern for evacuations is the CAADC site. Should an incident occur on Santa Fe Drive or on the BN&SF tracks, there could be some difficulty in evacuating the site quickly due to the limited number of current access points. The creation of additional access points is anticipated as part of full civilian reuse of the site.

GOAL SF-12. Provide for the orderly evacuation of residents in the event of a disaster.

Policy SF-12.1. Pursue the development of more access routes to and from the CAADC

site.

Policy SF-12.2. Encourage construction of the proposed Castle Parkway/Santa Fe Drive interchange so as to improve traffic flow and facilitate evacuation from the CAADC site.

Implementation Program SF-12.a. Work with the Castle Joint Powers Authority to develop and implement a circulation plan to increase vehicle access to the CAADC. Options that may be considered and adopted include, but are not limited to, the extension of nearby roadways such as Bellevue Road and Ladino Avenue.



6. NOISE

NOISE ELEMENT

INTRODUCTION



Noise in a community has often been cited as being a health problem, not only in terms of actual physiological damages such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in a community arise from interference with human activities such as sleep, speech, recreation, and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the corresponding threat to public well-being is the basis for land use planning policies preventing exposures to excessive community noise levels.

The Noise Element requirements contained in California Government Code Section 65302(f) are summarized as follows:

The Noise Element shall identify and appraise noise problems in the community. The Noise Element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

- *Highways and freeways.*
- *Primary arterials and major local streets.*
- *Passenger and freight railroad*

operations and ground rapid transit systems.

- *Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.*
- *Local industrial plants, including, but not limited to, railroad classification yards.*
- *Other ground stationary sources identified by local agencies as contributing to the community noise environment.*

Noise contours shall be shown for all of these sources and stated in terms of the day-night average level (L_{dn}) or other appropriate noise descriptors. The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified above.

The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise. The noise element shall include policies, implementation measures, and possible solutions that address existing and foreseeable noise problems, if any.

FUNDAMENTALS OF NOISE

Noise is often described as unwanted sound. Although there are many factors that can make a sound undesirable, one of the most common is loudness. The loudness of sound is measured by units called decibels (dB), and the range of sound volumes is covered by the decibel scale. A useful aspect of the decibel scale is that changes in levels correspond closely to human perception of relative loudness. This correspondence is

more closely approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this document are in terms of A-weighted levels (Figure 6-1).

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The L_{eq} shows very good correlation with a community's response to noise, and it is the foundation for other noise descriptors.

It is commonly assumed that people are more sensitive to noise at certain times of the day. Thus, noise descriptors have been developed that give extra weight to noises that occur at certain times. The day-night average level (L_{dn}) is one such descriptor. It is based upon the average noise level over a 24-hour day, with a 10-decibel weighting applied to noise occurring during nighttime hours (10:00 p.m.-7:00 a.m.). The Community Noise Equivalent Level (CNEL) is the same as L_{dn} , except that CNEL also has a 3-decibel weighting applied to noise occurring during evening hours (7:00 p.m. - 10:00 p.m.). Both L_{dn} and CNEL represent 24-hour averages; thus, both descriptors tend to disguise short-term variations in the noise environment.



The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) with the Calven vehicle noise emission curves was used to predict traffic noise levels within the Atwater City

Limits. The FHWA Model is the traffic noise prediction model currently preferred by the Federal Highway Administration, the State of California Department of Transportation (Caltrans), and most city and county governments, for use in traffic noise assessment. Although the FHWA Model is in the process of being updated by a more sophisticated traffic noise prediction model, the use of RD-77-108 is considered acceptable for the development of General Plan traffic noise contours. The FHWA Model was used with traffic data obtained from Valley Research and Planning Technologies, published Caltrans traffic counts, and field surveys to develop existing and projected L_{dn} noise contours.

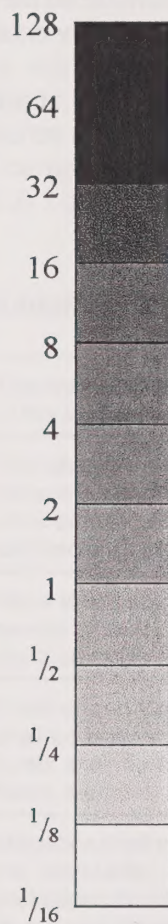
For railroads, existing noise emissions were quantified through continuous noise level measurements conducted over a 48-hour period (July 27-30, 1998) at the locations shown in Figure 6-5 on page 11.

For non-transportation sources, noise level measurements were conducted in the vicinity of the Atwater Canning Company facility, and an estimated location of the plant's 55 dB L_{eq} noise contour was developed. To quantify existing noise levels in the quieter parts of the City of Atwater, a community noise survey was performed at seven locations in the City which are somewhat removed from major noise sources. One of the seven locations was monitored over a continuous 24-hour period, while the other six locations were each monitored for two 15-minute periods during daytime hours and one 15-minute period during nighttime hours.

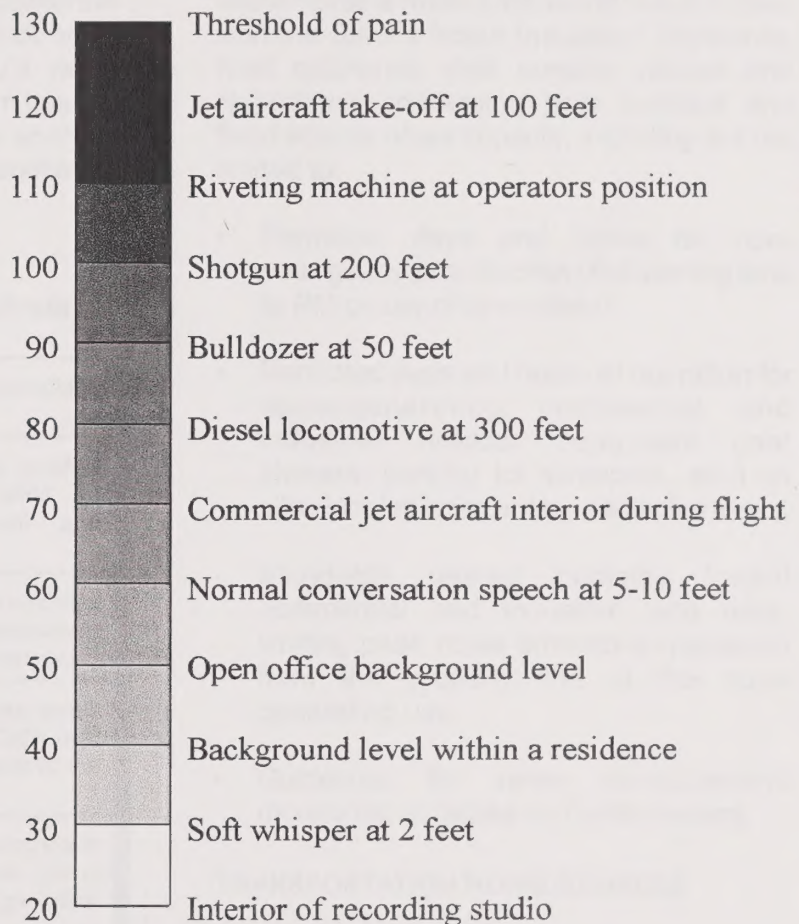
COMMUNITY NOISE SURVEY

**Figure 6-1[9.1]
Comparative Sound Levels**

LOUDNESS RATIO LEVEL



A-WEIGHTED SOUND LEVEL (DBA)



Notes:

The loudness ratio is an expression of the magnitude increase of noise. A 10dBA increase in noise is perceived as twice as loud. For example, 70 dBA is perceived as twice as loud as 60 dBA.

GOAL NO-1. Protect residents from the harmful and annoying effects of exposure to excessive noise.

Policy NO-1.1. Monitor and update data regarding the community's ambient and fixed noise levels.

Policy NO-1.2. Require that an acoustical analysis be submitted for new development in locations where exterior and/or interior noise levels will likely exceed the City's noise standards, so that appropriate mitigation measures can be determined. The analysis must comply with the guidelines identified in Table 6-1 below.

**Table 6-1
Guidelines for Acoustical Analysis**

1.	The analysis shall be the financial responsibility of the applicant.
2.	The analysis shall be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
3.	Noise levels shall be documented with sufficient sampling periods and locations to adequately describe noise conditions and noise sources.
4.	Existing and projected (20 year) noise levels shall be estimated in terms of L_{dn} or CNEL and levels shall be compared to the policies of the Noise Element.
5.	Mitigation shall be recommended to comply with the standards of the Noise Element, giving preference to site planning and design rather than noise barriers.
6.	Noise exposure after the prescribed mitigation measures have been implemented shall be estimated.
7.	A post-project assessment program to evaluate the success of mitigation measures shall be described.

Policy NO-1.3. Encourage the use of site planning and building materials/design as primary methods of noise attenuation.

Implementation Program NO-1.a. Periodically update existing local noise maps as new information about the community's noise environment becomes available to ensure accuracy in land use compatibility planning and appropriate mitigation of noise impacts.

Implementation Program NO-1.b. Adopt and enforce a Noise Ordinance that complies with the State's Noise Insulation Standards. Said ordinance shall contain policies and regulations addressing both ambient and fixed source noise impacts, including but not limited to:

- Permitted days and hours for non-emergency construction (AM starting time to PM cease of operations).
- Permitted days and hours of operation for noise-generating commercial and industrial outdoor equipment (leaf blowers, parking lot sweepers, etc.) on sites located adjacent to residential areas.
- Standards geared primarily toward commercial and industrial land uses, limiting peak noise emissions measured from the property line of the noise generating use.
- Guidelines for noise measurement/monitoring activities and enforcement.

TRANSPORTATION NOISE SOURCES

Roadways



The FHWA Model was used to develop existing L_{dn} contours for SR 99 and major roadways within the City.

The distances from the centerlines of the major roadways to the existing 60 and 65 dB L_{dn} contours are summarized in Table 6-2. The 60 dB L_{dn} contour locations for existing conditions on major roadways in the Atwater area are shown on Figure 6-2. The distances from the centerlines of the major roadways to the

**Table 6-2
Traffic Noise Model Data Inputs and Distances to Existing Noise Contours**

Seg.	Roadway Name	Segment Description	ADT	Day %	Night %	Truck Usage		Speed (mph)	Distance to L _{dn} Contours (feet)	
						Med.	Hvy.		60 dB	65 dB
1	State Route 99	Buhach - Shaffer	63,276	75	25	5	20	65	2,182	1,013
2		Shaffer - Winton	44,983	75	25	5	20	65	1,738	807
3		Winton - NW City Limits	43,742	75	25	5	20	65	1,706	79
4	Applegate Road	South City Limits - Atwater	20,023	83	17	5	5	50	409	190
5	Winton Way	Atwater - Bellevue	20,353	83	17	2	2	45	279	130
6		Bellevue - North City Limits	14,158	83	17	2	2	45	219	102
7	1 st Street	Atwater - Bellevue	8,407	83	17	2	2	40	130	60
8	Giannini	Atwater Jordan - Commerce	1,846	83	17	5	5	45	73	34
9	Shaffer Road	Atwater - Bellevue	13,499	83	17	2	2	45	212	99
10		Bellevue - Santa Fe	12,207	83	17	2	2	45	199	92
11	Buhach Road	Broadway - Juniper	9,649	83	17	5	5	50	252	117
12		Juniper - Santa Fe	6,510	83	17	5	5	50	194	90
13	Atwater Boulevard	Wedel - Winton	15,425	83	17	5	5	45	302	140
14		Winton - Shaffer	18,270	83	17	5	5	45	338	157
15	Commerce Avenue	Applegate - Industry	3,047	83	17	5	5	45	102	47
16	Broadway	Winton - Shaffer	4,063	83	17	2	2	45	95	44
17		Shaffer - 99 (to the South)	6,825	83	17	5	5	45	175	81
18	Juniper Avenue	Winton - Shaffer	1,929	83	17	2	2	40	49	23
19		Shaffer - Buhach	7,451	83	17	2	2	40	120	56
20	Bellevue Road	Gibson - Shaffer	12,782	83	17	2	2	45	205	95
21		Shaffer - Santa Fe	13,278	83	17	2	2	45	210	98
22	Santa Fe Drive	Bellevue - Shaffer	15,518	83	17	5	5	55	391	182

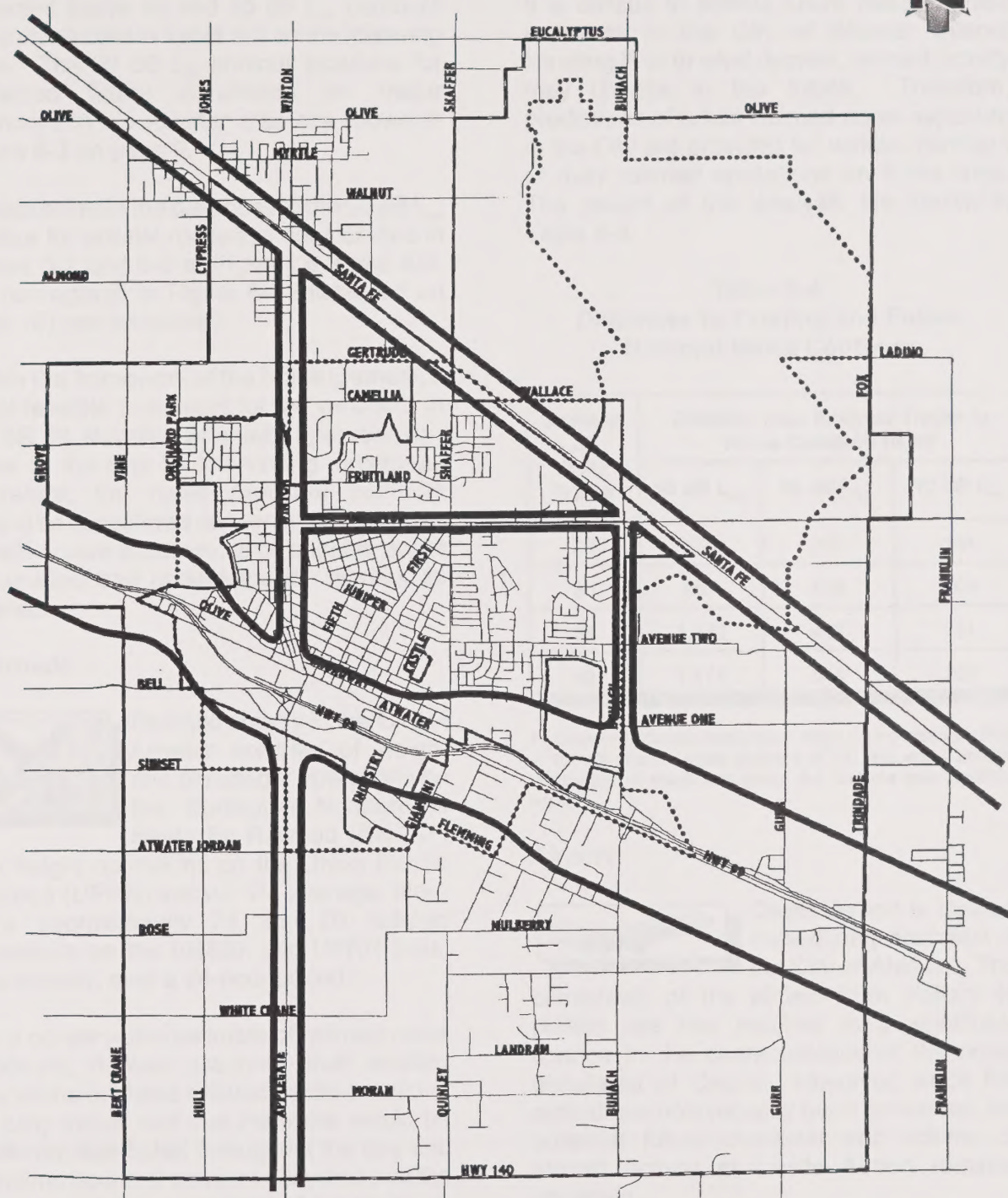
Source: Valley Research and Planning Technologies, Bollard & Brennan, Inc., Caltrans.

ADT - Average Daily Traffic

Day%/Night % - percentage of daily traffic on road at day/night

Figure 6-2
Existing Traffic Noise Contours





LEGEND:

- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- 60 dB Ldn Noise Contours



Castle Airport & Aviation
Development Center

Noise Element

projected future 60 and 65 dB L_{dn} contours are summarized in Table 6-3 on the following page. The 60 dB L_{dn} contour locations for projected future conditions on major roadways in the Atwater area are shown in Figure 6-3 on page 9.

To approximate the distances to the 60 dB L_{dn} contour for arterial roadways not included in Tables 6-2 and 6-3 or Figures 6-2 and 6-3, the nomograph in Figure 6-4 (displayed on page 10) can be utilized.

Within the framework of the Noise Element, it is not feasible to account for the variability in the SR 99 elevation or shielding of roadway noise in the City by intervening structures. Therefore, the noise exposure contours should be considered conservative estimates of traffic noise exposure, to be supplemented by detailed and project-specific studies as needed.

Railroads



Railroad activity in the City of Atwater consists of freight and passenger operations on the Burlington Northern & Santa Fe Railroad (BN&SF) and freight operations on the Union Pacific Railroad (UPRR) tracks. On average, there were approximately 24 and 20 railroad operations on the BN&SF and UPRR lines, respectively, over a 24-hour period.

For a conservative estimate of railroad noise exposure, it was assumed that existing operations on these railroad tracks consist of 25 daily trains, and that the trains would be randomly distributed throughout the day and nighttime hours. It was also assumed that the mean sound exposure level of the trains on both lines would be approximately 103 dB at a distance of 100 feet from the railroad tracks, including horn usage. The approximate location of the future 60 dB L_{dn} railroad noise level contours are shown on Figure 6-5 on page 11.

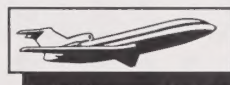
It is difficult to predict future railroad noise exposure in the City of Atwater without knowing if, or to what degree, railroad activity may change in the future. Therefore, predictions of future railroad noise exposure in the City are provided for various numbers of daily railroad operations on these lines. The results of this analysis are shown in Table 6-4.

Table 6-4
Distances to Existing and Future
Railroad Noise Contours

Number of Daily Trains	Distance from Railroad Tracks to Noise Contours (feet) ¹		
	60 dB L_{dn}	65 dB L_{dn}	70 dB L_{dn}
25	856	397	184
30	967	449	208
35	1,072	497	231
40	1,171	544	252

1) Contour distances based on a mean sound exposure level of 103 dB at a reference distance of 100 feet, and a uniform distribution of trains throughout the daytime and nighttime hours.

Airport



Castle Airport is located immediately northeast of the City of Atwater. The conversion of the airfield from military to civilian use has resulted in a significant change in the characteristics of the noise generated at Castle. However, since the airfield has only recently been converted, the potential future character and volume of aircraft activity at Castle Airport remains uncertain.

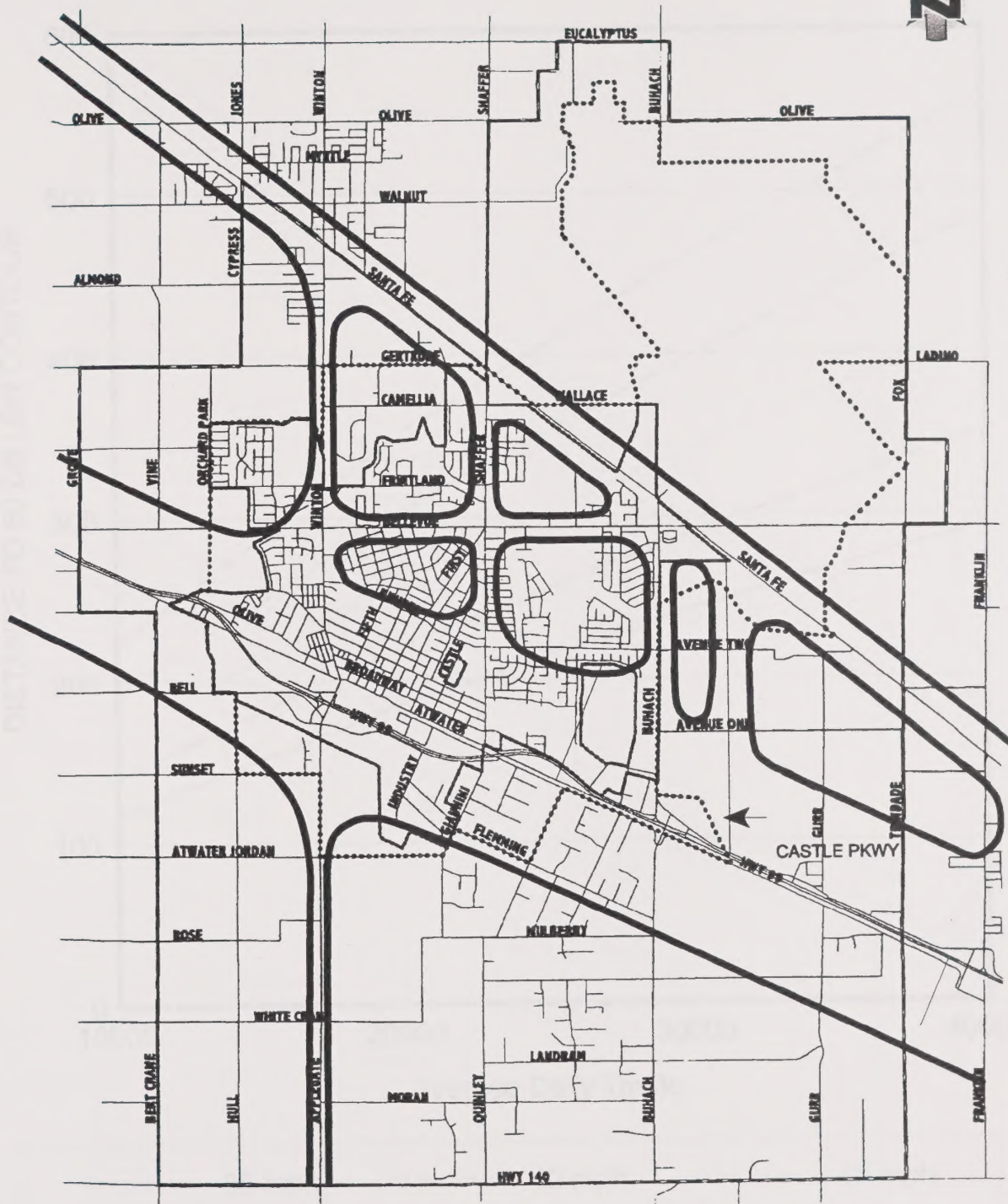
Table 6-3
Traffic Noise Model Data Inputs and Distances to Future Noise Contours

Seg.	Roadway Name	Segment Description	ADT	Day %	Night %	Truck Usage		Speed (mph)	Distance to L _{dn} Contours (feet)	
						Med.	Hvy.		60 dB	65 dB
1	State Route 99	Buhach - Shaffer	106,985	75	25	5	20	65	1,437	3,097
2		Shaffer - Winton	80,808	75	25	5	20	65	1,192	2,569
3		Winton - NW City Limits	76,839	75	25	5	20	65	1,153	2,484
4	Applegate Road	South City Limits - Atwater	10,444	83	17	5	5	50	123	265
5	Winton Way	Atwater - Bellevue	35,886	83	17	2	2	45	189	408
6		Bellevue - North City Limits	24,604	83	17	2	2	45	147	317
7	1 st Street	Atwater - Bellevue	13,078	83	17	2	2	40	81	175
8	Giannini	Atwater Jordan - Commerce	5,191	83	17	5	5	45	68	146
9	Shaffer Road	Atwater - Bellevue	30,701	83	17	2	2	45	171	367
10		Bellevue - Santa Fe	23,409	83	17	2	2	45	142	307
11	Buhach Road	Broadway - Juniper	12,937	83	17	5	5	50	142	306
12		Juniper - Santa Fe	13,738	83	17	5	5	50	148	318
13	Atwater Boulevard	Wedel - Winton	28,503	83	17	5	5	45	211	454
14		Winton - Shaffer	34,950	83	17	5	5	45	241	520
15	Commerce Avenue	Applegate - Industry	1,570	83	17	5	5	45	31	66
16	Broadway	Winton - Shaffer	3,540	83	17	2	2	45	40	87
17		Shaffer - 99 (to the South)	8,552	83	17	5	5	45	94	204
18	Juniper Avenue	Winton - Shaffer	4,607	83	17	2	2	40	40	87
19		Shaffer - Buhach	11,034	83	17	2	2	40	72	156
20	Bellevue Road	Gibson - Shaffer	26,981	83	17	2	2	45	156	337
21		Shaffer - Santa Fe	29,960	83	17	2	2	45	168	362
22	Santa Fe Drive	Bellevue - Shaffer	31,418	83	17	5	5	55	290	626
23	Castle Parkway	99 - Santa Fe	35,106	83	17	5	5	55	313	674

Source: Valley Research and Planning Technologies, Bollard & Brennan, Inc., Caltrans.

ADT - Average Daily Traffic

Day%/Night % - percentage of daily traffic on road at day/night

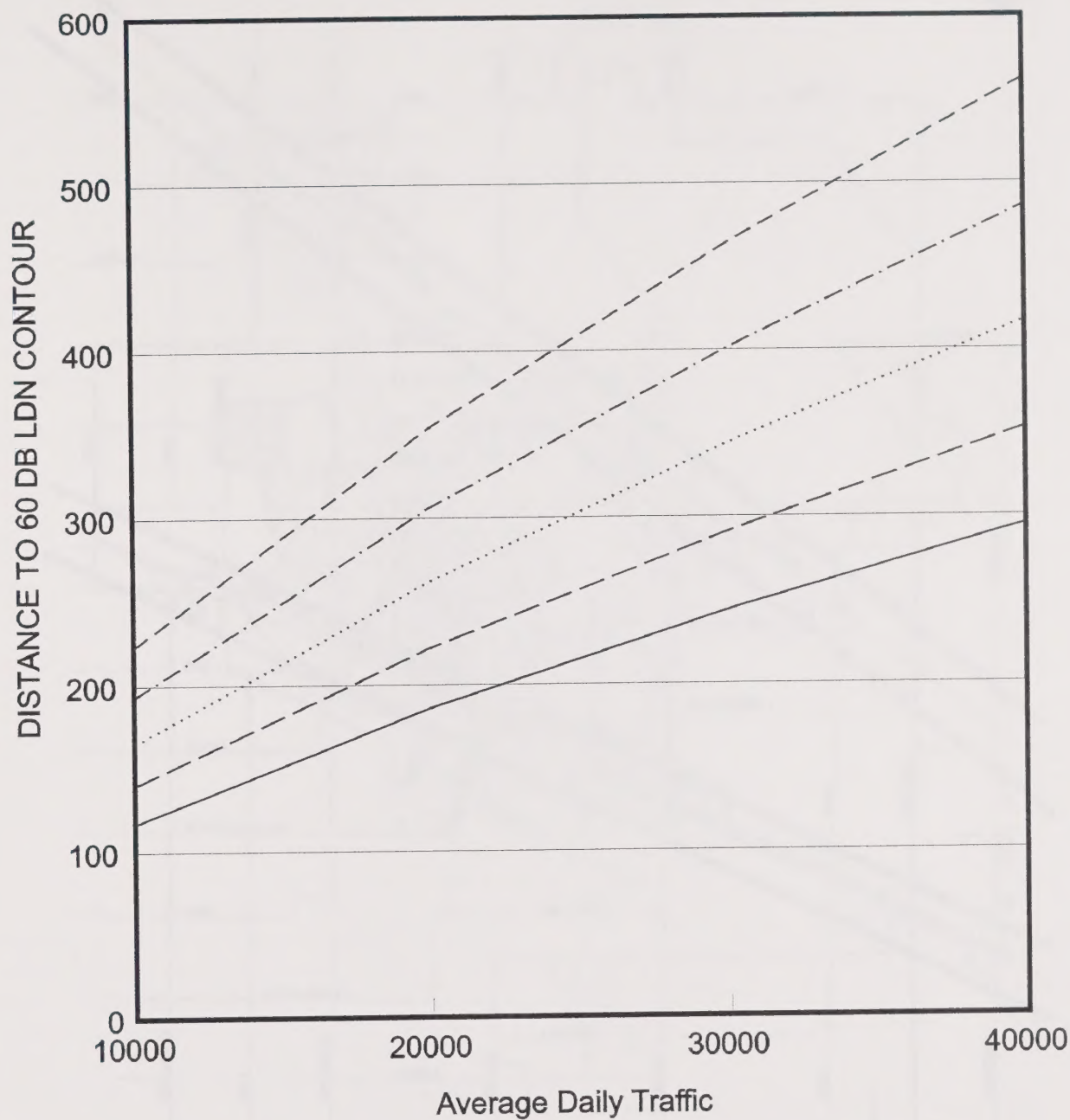


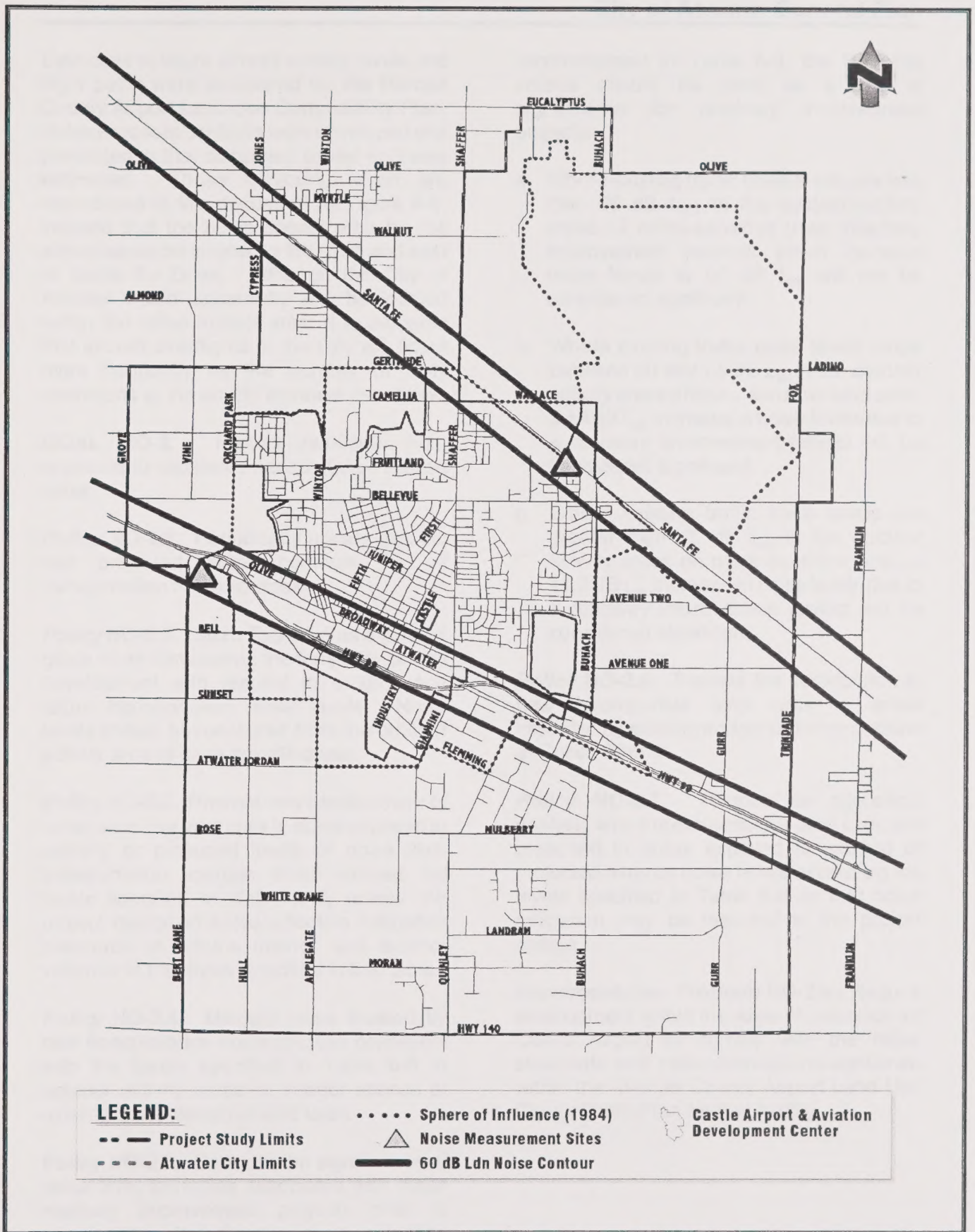
LEGEND:

- Project Study Limits
- - - - Atwater City Limits

- Sphere of Influence (1984)
- 60 dB Ldn Noise Contours

 Castle Airport & Aviation Development Center





Estimates of future aircraft activity levels and flight paths were developed for the Merced County Airport Land Use Compatibility Plan. Noise exposure contours were developed and presented in that document based on these estimates. Those contours, which are reproduced in this document as Figure 6-6, indicate that the noise impact area for the airport would be located to the north and east of Santa Fe Drive. Although the City of Atwater would apparently not be located within the noise impact area, it is probable that aircraft overflights of the City will occur more frequently as the number of daily operations at the airport increase over time.

GOAL NO-2. Protect residents from exposure to excessive transportation related noise.

Policy NO-2.1. Periodically update existing and projected noise contours for all transportation noise sources.

Policy NO-2.2. Utilize Table 6-5 as a general guide when considering the feasibility of new development with respect to existing and future transportation noise levels. Noise levels should be measured from the outdoor activity area of each specified use.

Policy NO-2.3. Prevent new development of noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation sources which exceed the levels specified in Table 6-6, unless the project design includes effective mitigation measures to reduce interior and exterior volumes to the levels specified in that table.

Policy NO-2.4. Mitigate noise created by new transportation noise sources consistent with the levels specified in Table 6-6 in outdoor activity areas or interior spaces of existing noise-sensitive land uses.

Policy NO-2.5. Consider the significance of noise level increases associated with major roadway improvement projects prior to construction. In instances where mitigation will not reduce noise volumes to the levels

recommended in Table 6-6, the following criteria should be used as a test of significance for roadway improvement projects:

- a. Where existing traffic noise levels are less than 60 dB L_{dn} , in the outdoor activity areas of noise-sensitive uses, roadway improvement projects which increase noise levels to 60 dB L_{dn} will not be considered significant.
- b. Where existing traffic noise levels range between 60 and 65 dB L_{dn} in the outdoor activity areas of noise-sensitive land uses, a +3 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.
- c. Where existing traffic noise levels are greater than 65 dB L_{dn} in the outdoor activity areas on noise-sensitive uses, a +1.5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.

Policy NO-2.6. Prevent the introduction of new incompatible land uses in areas impacted by existing and projected operations at Castle Airport.

Policy NO-2.7. Require an acoustical analysis when noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 6-6 so that noise mitigation may be included in the project design.

Implementation Program NO-2.a. Require development within the Area of Influence for Castle Airport to comply with the noise standards and recommendations contained within the Merced County Airport Land Use Compatibility Plan for that facility.

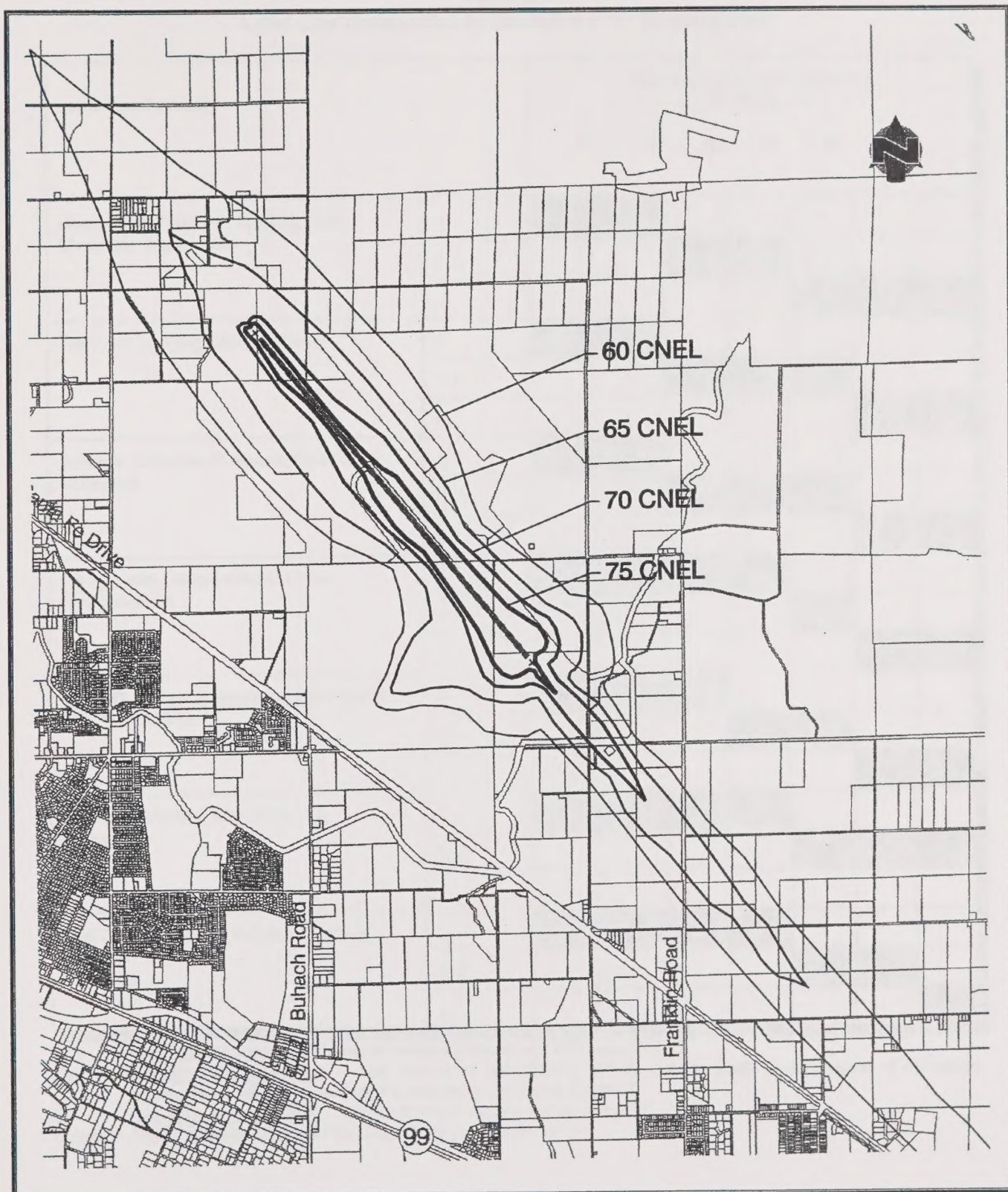


Table 6-5
Land Use Compatibility Guidelines for Development

Land Use Category		Community Noise Exposure L _{dn} or CNEL, dB					
		55	60	65	70	75	80
Residential, Theaters, Meeting Halls, Churches, Auditoriums	A.						
	C.A.						
	U.						
Transient Lodging, Motels, Hotels	A.						
	C.A.						
	U.						
Schools, Libraries, Hospitals, Child Care, Museums	A.						
	C.A.						
	U.						
Playgrounds, Neighborhood Parks, Amphitheaters	A.						
	C.A.						
	U.						
Office Buildings, Businesses, Commercial and Professional	A.						
	C.A.						
	U.						
Industrial, Utilities, Manufacturing, Agriculture	A.						
	C.A.						
	U.						
Golf Courses, Riding Stables, Outdoor Spectator Sports	A.						
	C.A.						
	U.						

A. Generally Acceptable - No noise mitigation measures are required.

C.A. Conditionally Acceptable - Use should be permitted only after careful study and inclusion of mitigation measures as needed to satisfy the policies of the Noise Element.

U. Generally Unacceptable - Development is usually not acceptable.

Source: 1990 California General Plan Guidelines (Appendix A)

Table 6-6
Maximum Allowable Noise Exposure
Transportation Noise Sources

Land Use	Outdoor Activity Areas ¹ $L_{dn}/CNEL$, dBA	Interior Spaces	
		$L_{dn}/CNEL$, dBA	L_{eq} , dBA ²
Residential	60 ³	45	--
Transient Lodging	60 ³	45	--
Hospitals, Nursing Homes	60 ³	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60 ³	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	60 ³	--	45
Playgrounds, Neighborhood Parks	70	--	--

¹ The exterior noise-level standard shall be applied to the outdoor activity area of the receiving land use. Outdoor activity areas are normally located near or adjacent to the main structure and often occupied by porches, patios, balconies, etc.

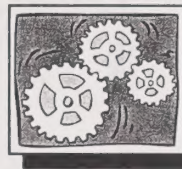
² As determined for a typical worst-case hour during periods of use.

³ Where it is not possible to reduce the noise in outdoor activity areas to 60 dBA, $L_{dn}/CNEL$ or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dBA, $L_{dn}/CNEL$ may be allowed, provided that practical exterior noise level reduction measures have been implemented and that interior noise levels are in compliance with this table.

STATIONARY NOISE SOURCES

Descriptions of existing fixed noise sources in the City of Atwater are provided below. These uses are intended to be representative of the relative noise generation of such uses, and are intended to identify specific noise sources which should be considered in the review of development proposals.

Industrial Activities

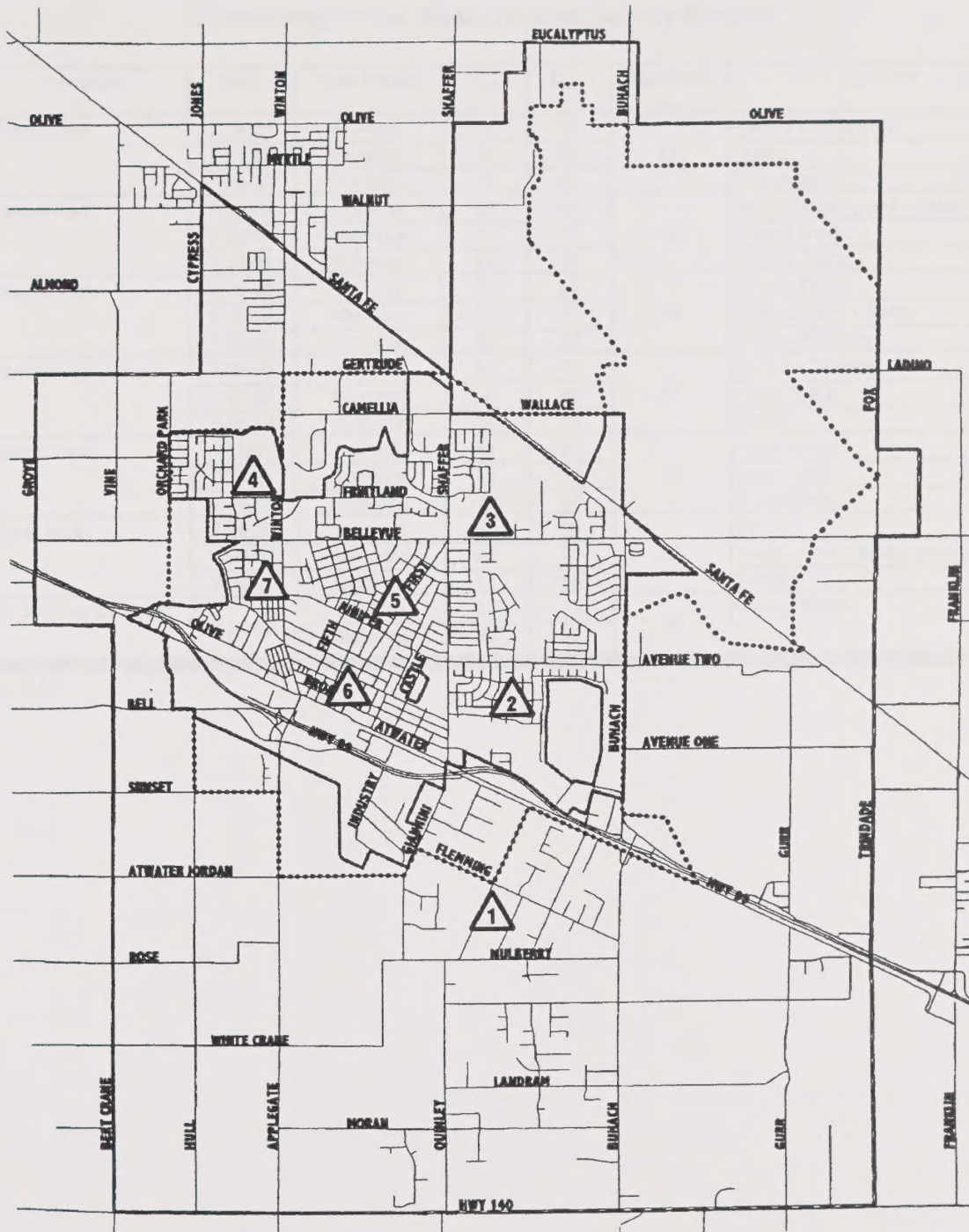


Industry in the City of Atwater is essentially focused in the area bounded by Broadway to the northeast, the City limits to the southwest, Giannini Road to the southeast, and the City limits to the west. This grouping of industries is ideally located in that it is in very close proximity to SR 99 and the UPRR, and in that it is fairly well removed from the established residential neighborhoods of the City.

Atwater Canning Company

The Atwater Canning Company is the largest industry identified within the City limits. Located between SR 99 and the UPRR tracks, it is situated with other major noise sources in the City. Operations at the Atwater Canning Company consist of canning fruits and vegetables. From June through September, the plant operates 7 days per week, 24 hours per day. The rest of the year it reportedly operates 5 days per week for 10 hours per day. The most significant noise-producing equipment at this facility is the steam generator, which is clearly audible in the plant vicinity. The plant generates approximately 35 truck trips on a typical day. In addition, the plant utilizes the railroad 2 to 3 times per month for deliveries. The railroad operations reportedly occur on weekdays between 6 a.m. and 6 p.m.

Noise level measurements conducted in the vicinity of this facility indicate that plant-generated noise levels vary, but are highest in the immediate vicinity of the main processing equipment. The estimated location of the plant 55 dB L_{eq} noise contour is shown on Figure 6-7. The plant is unaware of any noise complaints associated with the operation of this facility, and there are currently no specific plans for expansion of the plant.



LEGEND:

- Project Study Limits
- Atwater City Limits

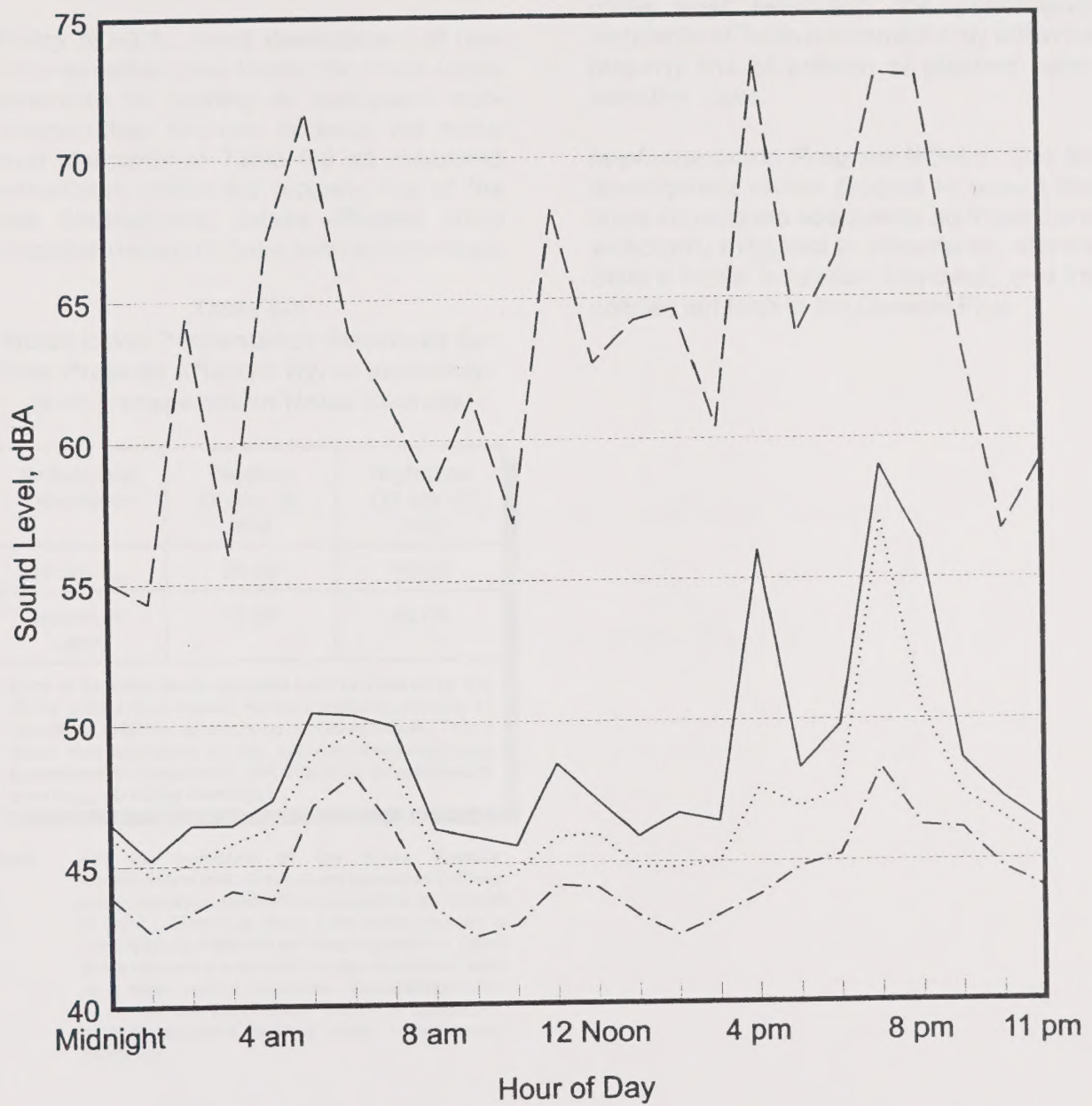
- Sphere of Influence (1984)
- 1 Noise Measurement Sites

Castle Airport & Aviation Development Center

**Table 6-7
Community Noise Measurement Survey Results**

Site	Location	Date	Time Period	L_{eq}	L_{max}	Estimated L_{dn}	Sources
1	Violet Court	7-28-98	Morning	54	68	53	Train & distant traffic
		7-28-98	Afternoon	50	68		Traffic
		7-28-98	Nighttime	44	62		Distant traffic
2	Albani Park	7-29-98	Morning	45	49	52	Air conditioning unit - distant traffic
		7-28-98	Afternoon	51	72		Distant Traffic
		7-28-98	Nighttime	44	54		Distant Traffic
3	Osborn Park	7-29-98	Morning	52	63	59	Distant Traffic
		7-28-98	Afternoon	59	67		Railroad horn - Traffic
		7-28-98	Nighttime	51	62		Traffic - Crickets
4	Atwater High School	7-29-98	Morning	58	68	61	Traffic - Children
		7-28-98	Afternoon	56	66		Local Traffic
		7-28-98	Nighttime	54	65		Traffic
5	Walter Park	7-29-98	Morning	54	66	55	Local Traffic
		7-28-98	Afternoon	53	63		Local Traffic
		7-28-98	Nighttime	47	50		Local Traffic
6	Bloss Park	7-29-98	Morning	52	56	58	Traffic
		7-28-98	Afternoon	57	71		Traffic - wind blowing through trees
		7-28-98	Nighttime	51	59		Traffic
7	St. Anthony's Church	7-28-98	Daytime	52	73	55	Distant Traffic
			Nighttime	48	72		

Source: BAC



Noise Element

GOAL NO-3. Protect the economic base of the City of Atwater by preventing incompatible land uses from encroaching upon existing or planned noise producing uses.

Policy NO-3.1. Avoid development of new noise-sensitive uses where the noise levels generated by existing or anticipated non-transportation sources exceeds the noise level standards of Table 6-8 as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated.

Table 6-8

Noise Level Performance Standards for New Projects Affected By, or Including, Non-Transportation Noise Sources

Noise Level Descriptor	Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am)
Hourly L_{eq}	55 dB	45 dB
Maximum Level	75 dB	65 dB

Each of the noise levels specified shall be lowered by five dB for simple tone noises, noises consisting primarily of speech, or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

Note: For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations, and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are subject to local regulations, such as a noise control ordinance. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, loading docks, etc.

GOAL NO-4. Prevent the introduction of new fixed noise sources in noise-sensitive areas.

Policy NO-4.1. Mitigate noise created by new proposed nontransportation sources consistent with the noise level standards of Table 6-8 as measured immediately within the property line of lands designated for noise-sensitive land uses.

Policy NO-4.2. Require an acoustical analysis when proposed new nonresidential land uses or the expansion of existing nonresidential land uses is likely to produce noise level exceeding the performance standards of Table 6-8 immediately within the property line of existing or planned noise-sensitive uses.

Implementation Program NO-4.a. Use the development review process to ensure that noise impacts are adequately addressed and sufficiently mitigated in accordance with the State's Noise Insulation Standards and the policies set forth in the General Plan.

Economic Development

7. ECONOMIC DEVELOPMENT

ECONOMIC DEVELOPMENT ELEMENT

INTRODUCTION

The purpose of the Economic Development Element is to provide guidance for actions by the City that will foster economic stability and promote economic growth. A healthy local economy is crucial in maintaining and enhancing the quality of life in a community. The availability of jobs within a community not only allows residents to earn a living, it also gives them a stake in the well-being of the community. Existing businesses have the opportunity to grow and expand, while new businesses broaden both employment and shopping opportunities. The local government collects increased revenues, which would allow it to offer improved and expanded services for the community. In short, economic development affords a community a greater opportunity to shape its quality of life.

The importance of a healthy and diverse economy to the City was realized fully in the early 1990s, with the statewide recession and the closure of Castle Air Force Base. Although the City's economy is recovering, these events have impressed upon the City the need to attract and retain businesses and to diversify its economic base. The City also recognizes that regional activities have an influence upon the local economy. Therefore, the Economic Development Element sets forth goals, policies, and implementation programs that will guide the City in its decisions that will affect both local and regional economic development.

The Economic Development Element complements and supplements many of the other elements of the General Plan. The Land Use Element designates commercial and industrial areas, as well as various types of residential areas. The Housing Element

ensures a variety of housing opportunities for potential employees. The Circulation Element plans for a transportation and public service system that will support businesses. The Conservation and Open Space Element enhances the local environment, improving the quality of life for the community, and making it more attractive to prospective businesses and investors.

The Economic Development Element is not a mandatory element. However, California Government Code Section 65303 states that a local government may include in its general plan any elements which, in its judgment, relates to the physical development of its jurisdiction. Once adopted, according to the state's *General Plan Guidelines*, an optional element has the same force and effect as the mandatory elements.

BACKGROUND

The City of Atwater was founded as an agricultural center, and agriculture still has a significant role in the local economy. Until recently, Castle Air Force Base was a major source of employment and customers for local businesses. With the closure of Castle Air Force Base, the City experienced a drastic change in its economy. The City has responded by seeking to attract new businesses, to retain its existing businesses, and to diversify its economic base.

Employment

There is no recent data on the composition of the work force in the City. The 1990 U.S. Census data have become dated with the closure of Castle Air Force Base; nevertheless, the data are the most recent available. Table 7-1 breaks down the Atwater labor force in 1990. Some manufacturing companies have located at the CAADC site since then, which means that manufacturing could have a larger role in City employment.

Table 7-1
Composition of Atwater Labor Force,
1990

Employment Field	Percent of Workforce
Agriculture, forestry, and fisheries	8.3
Construction and mining	5.8
Manufacturing	11.7
Transportation, communications, other public utilities	5.4
Wholesale trade	3.1
Retail trade	18.5
Finance, insurance, and real estate	4.9
Services	35.3
Public administration	6.9

Source: U.S. Census Bureau

The largest employer in the Atwater area is J.R. Wood, a frozen fruit processing and distribution company that employs 2,500 workers. Other large employers are Pacific Telesis (800), Atwater Canning Company (350-500), Joseph Gallo Farms (500), and Pace Setter Industries (500+). The largest public sector employer is the Atwater Elementary School District, with 500-600 workers.

The California Employment Development Department (EDD) monitors and maintains records on employment for cities and counties. Table 7-2 below shows the average annual unemployment rates in the City in the 1990s, along with those for Merced County and the state. It must be noted that the unemployment rates for the City were calculated using an EDD methodology which assumes that the rates of change in employment and unemployment since 1990 were exactly the same in each city as at the county level. Also, some of the rates were calculated on unrounded data and were not seasonally adjusted.

Table 7-2
Unemployment Rates, 1990-1997

Year	Unemployment Rates		
	Atwater	Merced Co.	California
1990	10.9%	12.2%	5.8%
1991	13.2%	14.8%	7.7%
1992	14.8%	16.5%	9.3%
1993	15.3%	17.0%	9.4%
1994	13.9%	15.5%	8.6%
1995	15.4%	17.1%	7.8%
1996	14.6%	16.3%	7.2%
1997	13.9%	15.5%	6.3%

Source: California Employment Development Department

With these cautionary notes, some trends in employment can be discerned. In the early 1990s, unemployment rates in Atwater and the county followed state trends, which worsened as a result of the economic recession that occurred. But while California's unemployment rate has decreased since its peak in 1993, Atwater and Merced County experienced another rise in 1995. This is likely to be attributable to the closure of Castle Air Force Base, with a subsequent loss of jobs associated with or dependent upon the facility. While the unemployment rate in the City has declined over the past two years, it is still well above the state average, and the difference between the City and state rates is greater than it was at the beginning of the decade.

Assuming no drastic change in economic conditions, it is anticipated that the unemployment rate in the City will continue to decline. As the former Castle Air Force Base is more fully utilized, more jobs are expected to be generated. The EIR for the Castle Air Force Base Reuse Plan indicated that under the Initial Phase of reuse, the number of employees at the site would be 7,325, equal to the number present at the Air Force base in 1990. In addition, Atwater will likely benefit from the opening of the University of

California campus near Merced. Nevertheless, given the relatively high unemployment rate, it is important that the City continue to support efforts that increase employment opportunities for its residents.

GOAL ED-1. Attract new employment generating businesses to the Atwater Planning Area and continue to diversify the community's economic base.

Policy ED-1.1. Prepare a new Target Industry Analysis to identify opportunities for attracting businesses to the City.

Implementation Program ED-1.a. The City shall hire a consultant with economic development and marketing experience to prepare an updated Target Industry Analysis.

GOAL ED-2. Retain existing businesses within Atwater and help facilitate their expansion.

Policy ED-2.1. Consider preparation of a Business Retention and Expansion Plan that provides strategies to support existing businesses in the City.

Policy ED-2.2. Consider the compatibility of proposed land uses when discretionary development projects are proposed adjacent to existing businesses or employment generating industries.

Implementation Program ED-2.a. The City shall consult with the Chamber of Commerce and other appropriate agencies and groups regarding the preparation of a Business Retention and Expansion Plan for the City. If a plan is determined to be desirable, the City shall pursue funding and authorize its preparation.

Household Income

The median household income for Atwater in 1998 is estimated to be \$28,295, compared with \$27,180 for Merced County. However, it is significantly lower than the state's median household income of \$43,396. The

distribution of incomes in 1998 shows that 19.14 percent of Atwater's households earn less than \$15,000 per year. This is greater than the state percentage of 15.92 percent, but it is less than Merced County's 24.40 percent. The percentage of households in Atwater with an income of \$50,000 or greater is 20.12 percent, compared with 21.10 percent for Merced County and 43.08 percent for the state. For middle incomes (\$25,000-\$49,999), the percentage of households in Atwater is 35.56 percent, compared to 32.26 percent for Merced County. It can be concluded that Atwater is relatively more affluent than Merced County as a whole, but only slightly more, and less affluent than the state overall.

Retail Sales

Table 7-3 presents historic retail sales in the City of Atwater and in Merced County. The table clearly shows the impact of the base closure on retail sales in the City of Atwater. The City was capturing additional market share every year between 1985 and 1992. However, since 1992, sales within the City have declined dramatically.

Table 7-3
Retail Sales in Atwater and Merced County, 1990-1996

Year	Atwater	Merced County
1990	\$60,162,000	\$746,779,000
1991	\$63,389,000↗	\$729,929,000↘
1992	\$66,619,000↗	\$748,055,000↗
1993	\$62,107,000↘	\$781,418,000↗
1994	\$57,951,000↘	\$832,451,000↗
1995	\$58,159,000↘	\$848,801,000↗
1996	\$58,929,000↗	\$880,012,000↗

Source: California Board of Equalization

↗ - Increase from previous year

↘ - Decrease from previous year

However, the base closure explains only part of this decline. Total retail sales in the market area increased almost \$84 million between

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1992 and 1994. Approximately \$77 million of this growth was captured by the City of Merced, whereas the City of Atwater's share decreased by almost \$9 million. This is directly attributable to the development that has occurred in the City of Merced since 1992, which includes the arrival of "big box" retailers such as Target, Wal-Mart, and Costco.

Table 7-4
Sales by Retail Category and Sales Leakage

Retail Category	Percent of Total Sales	Sales Leakage Rate
Apparel	2.69%	45.72%
General Merchandise	13.77%	25.57%
Drug Stores	3.70%	#
Food Stores	12.88%	1.93%
Liquor Stores	1.29%	#
Eating, Drinking Places	11.95%	-1.33%
Home Furnishings, Appliances	3.07%	51.89%
Building Materials	12.71%	80.23%
Auto Dealers, Supplies	18.83%	80.25%
Service Stations	13.14%	10.64%
Other Retail Stores	5.98%	6.95%
Total	100.00%	38.54%

- Data not available

Source: Castle Air Force Base Annexation Feasibility Study, Pacific Municipal Consultants (1996)

Table 7-4 presents a detailed breakdown of retail sales and the potential sales leakage from the City. In total, the City of Atwater is losing approximately 38 percent or \$36 million of potential retail sales to areas outside the City. Most of these sales are going to the City of Merced. Some of the lost sales are very significant, but they do not all necessarily relate to the large general merchandise and "big box" retailers that have located in the City of Merced. For example, Building Materials,

Auto Dealers, and Auto Supplies are losing approximately 80 percent of the estimated demand to areas outside Atwater.

The City is concerned about sales leakage, since it equates to money not being spent in the local economy - money that could stimulate local business expansion and local employment, along with increased City revenues. Therefore, it is one of goals of the City to stimulate the expansion of retail commercial activities, particularly in those areas in which sales leakage is severe. This goal is one of the reasons that the City has designated land for commercial development along the proposed Castle Parkway and the proposed Westside Boulevard/SR 99 interchange. With the installation of frontage roads, the proposed Castle Parkway corridor would provide access to land that could be used for expanded commercial activities, such as "big box" retailers, factory outlet centers, auto dealerships, and regional shopping malls. The Westside area also provides an opportunity to accommodate both local and region serving commercial uses.

GOAL ED-3. Reduce the occurrence of retail sales leakage to other communities.

Policy ED-3.1. Provide opportunities for a full range and scale of retail development within Atwater.

Implementation Program ED-3.a. As part of the City's marketing program, actively recruit businesses that provide goods and services currently lacking in Atwater.

Implementation Program ED-3.b. Pursue annexation of the Castle Parkway and Westside areas. Consider the preparation of Specific Plans that emphasize retail commercial development for both locations.

Business Development Programs

The City is involved in several programs to attract and retain businesses. Portions of the

City are within the Merced/Atwater/Planada Enterprise Zone (Figure 7-1). These include the Applegate and Atwater Business Parks, and other parts of the Atwater Redevelopment area. An Enterprise Zone offers several incentives for businesses, including state sales tax credits, hiring credits, net operating loss carryovers, and net interest deduction for lenders. Atwater is 1 of 41 Enterprise Zone communities in California. The City also provides some incentives: waiver of public facility impact fees, fast-tracking of permits, underwriting of public improvements as necessary, City- or Redevelopment Agency-owned property at below-market rates, and technical assistance by City staff to existing and proposed businesses.

The U.S. Department of Commerce approved the designation of Merced County as a Foreign Trade Zone Area in 1997. Portions of both the Applegate and Atwater Business Parks are proposed to be included in the planned Atwater General Purpose Foreign Trade Zone. The Castle Airport and Aviation Development Center will also be included in the zone. Businesses that import or export materials may defer or waive duties paid on goods. Each individual business included in the zone is required to pay activation fees to Merced County before taking advantage of the program.

All sites within the Applegate and Atwater Business Parks are located in the Merced County Recycling Market Development Zone (RMDZ). This program allows recycling-based businesses to qualify for very low interest rate loans, special technical assistance through the California Integrated Waste Management Board, fast-track permit processing, and special research and development tax credits.

In an effort to facilitate the reuse of the former Castle Air Force Base, the CAADC site in 1996 received the designation of a Local Agency Military Base Recovery Area

(LAMBRA). The LAMBRA designation is a state and local economic incentive program used to attract businesses to the sites of former military installations. State incentives include the following:

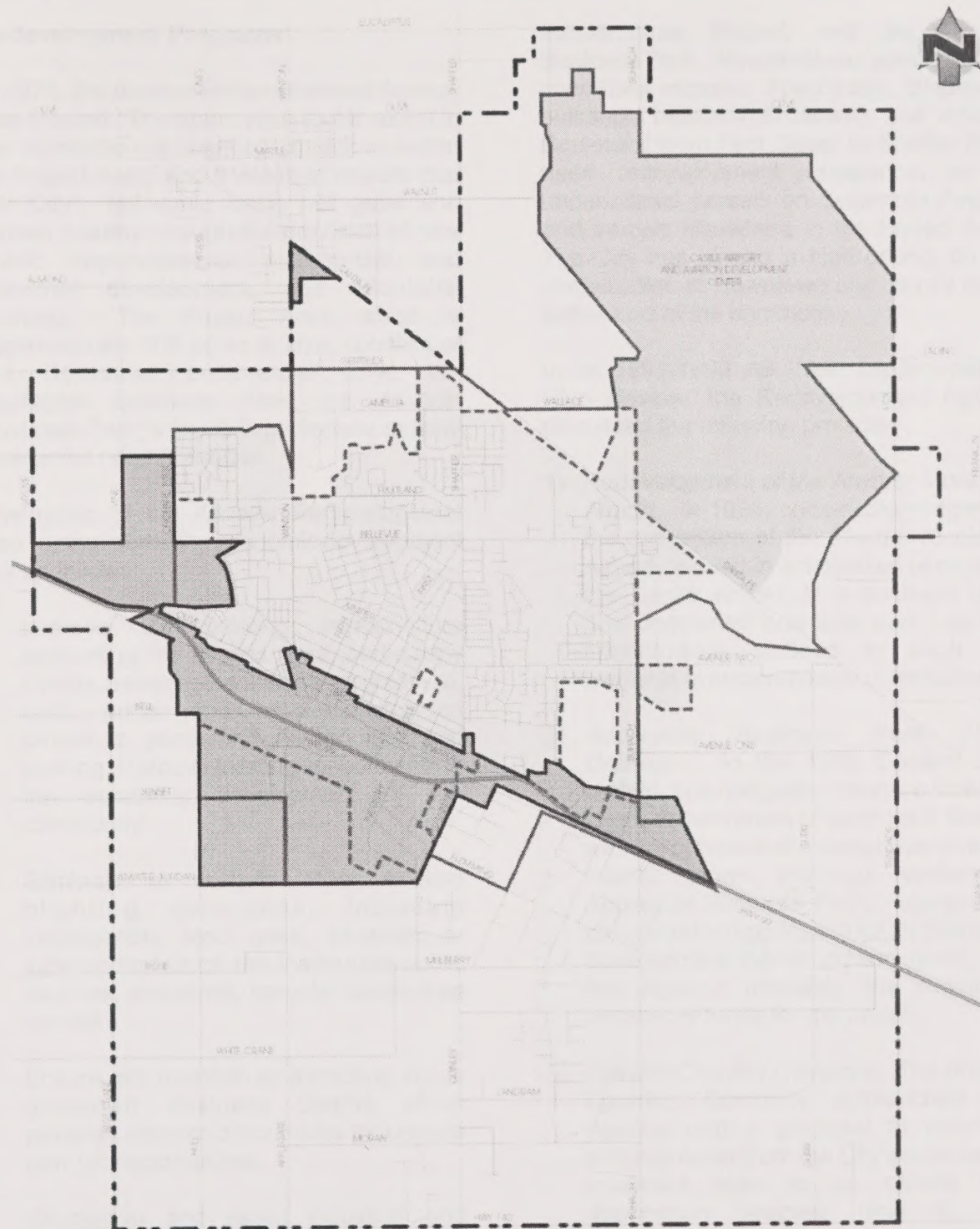
- Tax credits for sales and use tax paid on certain qualifying equipment and property.
- Tax credits for wages paid to qualifying employees.
- Fifteen-year net operating loss carryover.
- Election to treat the cost of certain property as an expense not chargeable to the capital account and allowable as a deduction against income.
- Priority and technical assistance from the Trade and Commerce Agency, the California Environmental Protection Agency, and the Office of Permit Assistance.

Local incentives that communities are asked to provide include streamlined permit processes. The LAMBRA designation expires seven years after it is conferred.

GOAL ED-4. Increase the number of locations where economic incentives are available within the Atwater Planning area.

Policy ED-4.1. Explore the feasibility and desirability of expanding the Enterprise Zone.

Implementation Program ED-4.a. The City shall investigate the procedures for expansion of the Enterprise Zone, and determine which areas within the Planning Area would be best assisted with inclusion in the Zone. Expansion of the Zone shall be pursued as determined appropriate.



LEGEND:

-- Project Study Limits
 - - - - Atwater City Limits

— Sphere of Influence (1984)
 Enterprise Zone

 Castle Airport & Aviation Development Center

Redevelopment Programs

In 1976, the Atwater Redevelopment Agency was created. The Agency is a tool to assist in the elimination of blighting conditions within its Project Area, and it seeks to ensure that the City's economic base will grow and remain healthy through the provision of new public improvements, commercial and industrial development, and affordable housing. The Project Area, which is approximately 806 acres in size, consists of the Downtown commercial core, the Applegate Business Park, the Atwater Business Park, two public parks, and several residential neighborhoods.

The goals of the Atwater Redevelopment Agency that pertain to economic development are as follows:

- Improve the existing infrastructure supporting the Project Area, particularly streets, sewerage, water, storm drainage, curb, gutter and sidewalk, railroad crossings, parks and playgrounds, and parking. Remove existing impediments to the economic development of the community.
- Eliminate or mitigate other existing blighting conditions, including incompatible land uses, obsolete or substandard structures, inadequate public facilities, and small, irregular landlocked parcels.
- Ensure and maintain an attractive, viable downtown Business District which provides economic incentives that create new job opportunities.
- Encourage and assist industrial and commercial development to ensure adequate job opportunities, a stable tax base in the community, and new investments in the Project Area.

Redevelopment projects that have been carried out include the Downtown Revitalization Project, the Southwest

Infrastructure Project, and the Atwater Business Park. Nevertheless, some blighted conditions remain. Specifically, dilapidated buildings between Broadway and Atwater Boulevard from First Street to Shaffer Road need redevelopment assistance, as do underutilized parcels on Sycamore Avenue and parcels elsewhere in the Project Area. The City has placed a high priority on the revitalization of Downtown and its role as an active part of the community.

In its 1994-1999 *AB 1290 Implementation Plan Review*, the Redevelopment Agency discussed the following projects:

- 1) *Redevelopment of the Atwater Municipal Airport.* In 1995, construction began on the conversion of the Atwater Municipal Airport, closed in anticipation of reuse of the Castle airfield, to a business park. The completed business park has City infrastructure stubbed to each site available to accommodate potential users.
- 2) *Applegate Business Park Storm Drainage.* In the 1992 General Plan update, one mitigation measure listed for future development of southwest Atwater was the provision of a comprehensive and master storm drainage system to Applegate Business Park. Agency staff completed an application for an Economic Development Administration grant, with the Agency providing the remaining necessary funds for the project.
- 3) *Atwater Canning Company.* The Atwater Canning Company approached the Agency with a proposal to divert its process water from the City's wastewater treatment plant to an off-site land application process (that is, the wastewater would be used to irrigate fields, rather than be treated at the City's plant). The intent was to keep the company competitive while freeing treatment capacity to service the CAADC site and new developments. The Agency assisted in the financing of pipeline construction by successfully completing a

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loan application to the Rural Economic Development Infrastructure Program and pledging an additional loan.

- 4) *Downtown "Bits and Pieces" Project.* In 1979, the Agency adopted a Downtown Business District Revitalization Plan. Several downtown infrastructure improvement projects were phased over several years, forming the "bits and pieces" approach. In 1995, the final phase was completed in the Downtown Atwater Core. The final phase consisted of the installation of new sidewalk, new street tree wells, curb, gutter, and handicap access ramps.
- 5) *NCI Building Systems.* An incentive package was offered to NCI Building Systems to locate its manufacturing and sales design office to the Atwater Business Park. The package included a land write-down, off-site improvements, permit discounts, and "fast-tracking" of the development process. The company's operations generate



approximately \$200,000 per year in sales tax revenues to the City, and more than \$40,000 annually in tax increments to the Agency.

The *Implementation Plan Review* also discusses future projects involving the Redevelopment Agency. Improvements of the aesthetics and value of the Atwater Boulevard corridor will continue to have a high priority. Another project is the provision

of infrastructure improvements and housing rehabilitation or new construction on Broadway and Atwater Boulevard east of First Street. The Agency will seek to stimulate business interest in the Applegate Business Park by providing storm drainage improvements, improving the Applegate Overpass and Highway 99 interchange, and actively marketing the business park. At the Atwater Business Park, the Agency shall be the lead and set forth improvement plans for its development, provide all basic infrastructure needs for light industrial activities, and employ active marketing strategies.

GOAL ED-5. Ensure that all eligible areas are included within the City's Redevelopment Area.

Policy ED-5.1. Evaluate the feasibility and desirability of expanding the Atwater Redevelopment area.

Implementation Program ED-5.a. The City shall conduct a study that determines if additional areas within Atwater meet the conditions for blight set forth in the state's Redevelopment Law. Upon completion of the study, the City shall determine if the Redevelopment Area boundaries can feasibly be expanded and pursue those activities as determined appropriate.

Downtown Revitalization

A downtown is a focal point for community activity and pride. As described within the Land Use Element, it is a place where businesses operate and cultural and entertainment opportunities may be found. A healthy, active downtown not only provides a center for the community, but it conveys a positive message to prospective businesses about the quality of life in the community.

The City has been engaged in efforts to make Downtown Atwater a more attractive and active part of the community. Much of the activity undertaken by the Redevelopment Agency has been focused upon improving the

appearance and the infrastructure of Downtown. As described earlier, further improvements are proposed for the Downtown area via redevelopment projects. Additional goals and policies regarding desired land use mixtures and activities in Downtown Atwater are described within the Land Use Element.

GOAL ED-6. Promote Downtown Atwater as the activity and cultural center of the community.

Policy ED-6.1. Actively support cultural activities and special events in the Downtown area.

Policy ED-6.2. Encourage the establishment of an entertainment facility in Downtown, such as a movie theater or a performing arts center.

Implementation Program ED-6.a. The City shall facilitate the use of Downtown as a cultural center by measures such as expediting permit procedures, improving parking availability, and renovating buildings that can be used for cultural events.

REGIONAL ECONOMIC SETTING

The City of Atwater is located within Merced County, in the northern portion of the San Joaquin Valley. The county seat, Merced, is a commercial as well as a governmental center. As previously described, Merced has attracted several large retail commercial outlets. Merced County is a predominantly agricultural county, and agriculture employs more people than any other economic sector. Government has also accounted for a significant share of employment in the County. However, both sectors have had a reduced share in employment in recent years. In particular, governmental employment has decreased for reasons that include tighter government budgets and military base closures.

Three sectors have had an increase in share of employment in Merced County:

manufacturing, services, and retail trade. The rise in service and retail trade employment reflect both changes in the state and national economy and increases in population. Manufacturing businesses may be attracted to Merced County because of its central location in California, lower land and business costs, good transportation network, and available business sites. Despite this growth, unemployment in Merced County remains high, compared with California overall. The unemployment rate for the County was 15.5 percent in 1997, compared with 6.3 percent for the state.

Economic activities in the County can influence the economy of the City, and vice versa. One example was Castle Air Force Base, which employed people from throughout Merced County as well as the City of Atwater. It is anticipated that the new University of California campus will also have a beneficial impact on the economy of the City. Some City residents will likely be employed by the university, and it is hoped that both students and staff members of the university will look for housing in the City, with attendant increases in spending within the local economy.

On an even larger perspective, the San Joaquin Valley has become one of the fastest growing regions within the state. Residents from the San Francisco Bay Area have been moving into the northern San Joaquin Valley, encouraged by lower housing costs and a good transportation system connecting the two regions. Businesses have also been relocating to the San Joaquin Valley due to lower land and business costs, as well as its central location in the state and the existence of a good transportation network. The cities of Modesto and Fresno, both near Merced County, have experienced significant growth in recent years. This growth is expected to extend to locations including Merced County and the incorporated cities within the County.

GOAL ED-7. Promote a cooperative and coordinated approach among all local and regional economic development entities.

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Policy ED-7.1. Work with the Chamber of Commerce, Merced County Economic Development Corporation (MCEDCO), and other appropriate agencies to promote economic development in the City.

Implementation Program ED-7.a. The City shall continue to participate in MCEDCO both financially and in developing strategies to attract and maintain businesses in Merced County.

ECONOMIC GROWTH PROSPECTS

The City of Atwater has undergone a difficult economic transition caused by the closure of Castle Air Force Base. Closure of the base has had numerous economic impacts on the community, affecting aspects such as vacancy rates, construction, and retail sales. It also contributed to a decline in the City's population. However, there are indications that Atwater is recovering from this blow and is resuming a growth trend in both its population and its economy. Among the indicators are an increase in residential and commercial building permits and the opening of more businesses.

While the closure of Castle Air Force Base had a negative impact on the Atwater area, it also provided an opportunity. The land and facilities have become available for civilian commercial and industrial use. With its centralized location in the state of California, its below-market land prices and its LAMBRA incentives, the CAADC site is particularly attractive. Several businesses, most notably Pacific Telesis and Pace Setter Industries, have located there, bringing jobs to the community.

There are other advantages on which Atwater can capitalize. Besides the CAADC site, the Applegate and Atwater Business Parks in the southern portion of the City offer commercial and industrial space. Atwater's proximity to the San Francisco Bay Area, its lower land costs, and its location along major transportation lines are other positive features. However, Atwater also suffers

some disadvantages. Among these are inadequate infrastructure (especially at the CAADC site), its reputation as a bedroom community for military personnel, and competition from other cities in the San Joaquin Valley. In particular, the nearby city of Merced has been successful in attracting numerous retail outlets, which contributes to the leakage of retail sales from Atwater.

Nevertheless, the outlook for Atwater's economy appears bright. With the reuse of the former Castle Air Force Base and the opening of the UC Merced campus in 2005, Atwater may expect some spillover benefits. An increasing population will fuel construction of residential buildings and provide a growing market for retail and other commercial businesses. Greater sophistication in marketing and recruitment will enable Atwater to attract industries that would fit into the local economy and bring jobs. With careful planning and success in recruiting new businesses, Atwater may achieve a healthier and more diverse economy than it had before the base closure.

GOAL ED-8. Enhance Atwater's community identity and image within the region.

Policy ED-8.1. Support efforts to more aggressively market Atwater as a place for business and for family living.

Policy ED-8.2. Promote cultural activities and special events that spotlight the City's cultural amenities and attract visitors to the City.

Implementation Program ED-8.a. The City shall cooperate with the Chamber of Commerce and other appropriate agencies and groups to develop a comprehensive marketing program aimed at targeted industries, based on the results of the Target Industry Analysis.

GOAL ED-9. Actively promote commercial and/or industrial development opportunities at the CAADC, Atwater and Applegate Business

Parks, Downtown Atwater, and proposed growth areas.

Policy ED-9.1. Promote the availability of commercial/industrial space with infrastructure and special incentives at CAADC, the business parks, Downtown, and other applicable locations.

Implementation Program ED-9.a. Incorporate the promotion of CAADC, the business parks, Downtown, and proposed growth areas within any marketing plan developed by or supported by the City.

ECONOMIC DEVELOPMENT STRATEGY

In summary, the overall objectives for the City concerning economic development are as follows:

- Increase awareness of the advantages Atwater offers to prospective businesses and their employees.
- Attract new industries to Atwater, using incentives and available sites at the business parks and CAADC.
- Assist in retaining existing businesses and encouraging their expansion.
- Provide expanded shopping opportunities for City residents.
- Make Downtown Atwater a significant area for activity within the community.
- Provide the necessary infrastructure for new businesses to start and existing businesses to expand.

The City has already implemented various programs designed to encourage the start or relocation of new businesses and the retention of existing businesses. There are also plans for redevelopment of specific areas and for reuse of the former Castle Air Force Base, as well as the City's Capital Improvement Plan. These plans and

programs have often been prepared independently of each other and by various agencies. Thus, the potential exists for uncoordinated actions which could conflict with specific economic development goals and could hamper overall economic development efforts.

GOAL ED-10. Integrate the community's economic development plans and programs.

Policy ED-10.1. Consider the designation of an Economic Development Coordinator on City staff to coordinate all economic development programs and pursue financing opportunities.

Implementation Program ED-10.a. The City shall consider the designation of a person to function as a full-time Economic Development Coordinator for the City. This person shall have the responsibility for coordinating all programs for economic development implemented by the City, and coordinating with other agencies in business retention and marketing programs.

Weighted Average Level - The total average level in feet, as measured on a sound level meter using the A-weighting filter process. The A-weighting filter emphasizes the frequencies that are most harmful to humans. It is a method used to the intensity of the noise, but it gives preference with respect to the human ear. Sound pressure levels weighted using this filter are labeled dBA.

ADT - Average Daily Traffic - The number of traffic that passes any given point in a 24-hour period.

Attenuation Rating - Rating with a unit that is assigned points that measure and quantify the amount of the sound's energy that is.

Air Pollutant Emission - Discharges into the atmosphere, usually quantified by weight or unit volume for a given pollutant from a given source.

Air Pollution Control District (APCD) - A jurisdiction or jurisdiction agency with legislative authority to adopt and enforce its own and regional air quality control standards and regulations and to enforce its laws.

Airport Level of Sound (L₅₀) - A noise parameter used to define a noise level, measured in decibels (dB), that is the average of the noise level during the day, evening, and night periods.

Attenuation - A reduction in the level of sound energy that is caused by the sound's energy being absorbed by the medium through which it is traveling.

Acoustic Noise Level - The level of sound energy that is measured in decibels (dB) and is used to define a noise level, measured in decibels (dB), that is the average of the noise level during the day, evening, and night periods.

These measurements are measured in the Acoustic Noise Level (ANL) which was first used March 7, 1972. The purpose of the ANL is to define the level of sound energy that is measured in decibels (dB) and is used to define a noise level, measured in decibels (dB), that is the average of the noise level during the day, evening, and night periods. The ANL defines the level of sound energy that is measured in decibels (dB) and is used to define a noise level, measured in decibels (dB), that is the average of the noise level during the day, evening, and night periods.

Acoustic Noise - The objective sound level measurement is a direct measurement of sound energy within a given level. In many cases, the level of sound energy that is measured in decibels (dB) and is used to define a noise level, measured in decibels (dB), that is the average of the noise level during the day, evening, and night periods.

Acoustic Noise - The objective sound level measurement is a direct measurement of sound energy within a given level. In many cases, the level of sound energy that is measured in decibels (dB) and is used to define a noise level, measured in decibels (dB), that is the average of the noise level during the day, evening, and night periods.

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A-weighted Sound Level - The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes very low and very high frequency components of the sound in a manner similar to the response of the human ear, and it gives good correlation with subjective reactions to noise. Sound pressure levels weighted using this filter are labeled dBA.

ADT - Average Daily Traffic. The amount of traffic that passes any given point within a 24-hour period.

Affordable Housing - Housing with a cost (rent or mortgage plus tax and insurance) not exceeding 25 percent of the occupant's gross income.

Air Pollutant Emission - Discharges into the atmosphere, usually specified by weight per unit of time for a given pollutant from a given source.

Air Pollution Control District (APCD) - A single-county or multi-county agency with legislative authority to adopt and enforce all rules and regulations necessary to control non-vehicular sources of air pollutants in its area.

Airport Land Use Commission (ALUC) - A state-authorized body existing in each county, responsible for developing plans for achieving land use compatibility between airports and their environs.

Alluvial - A general term for sediments laid down during recent geologic times in riverbeds, floodplains, lakes, fans at the foot of mountain slopes, and estuaries.

Alquist/Priolo Special Studies Zone - An area 500 feet from a major active fault and 200-300 feet from a well defined minor fault, as designated by the State Geologist. These designations are required by the Alquist/Priolo Special Studies Zone Act, which took effect March 7, 1973. The purpose of the Act is to prohibit the location of most structures for human occupancy across the traces of active fault, thus reducing fault rupture hazards. The Act defines "active fault" as one that has had activity within the last 11,000 years.

Ambient Noise - The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Annexation - The addition of an area or territory to a city, town, special district, or other governmental entity.

Aquatic - Growing or living in or on water.

Aquifer - A geologic formation beneath the ground surface that contains water.

Arterial - A main highway that is a through street.

Attenuation - The reduction of noise.

Building Intensity Standards - The bulk and concentration of physical development of uses permitted within a district. One example of a measure of building intensity is the floor-area ratio (FAR).

California Environmental Quality Act (CEQA) - State law requiring the assessment of projects for environmental effects and establishing procedures for the preparation and processing of environmental documents.

CDBG - Community Development Block Grant, a federal program providing funds to states for community development projects.

CEQA - See California Environmental Quality Act.

Clean Air Act - A federal law, originally enacted in 1963 and subsequently amended in 1970 and 1990, that requires the development of air quality standards and the preparation of air quality plans by states. California has its own Clean Air Act which has a similar purpose.

CNEL - See Community Noise Equivalent Level.

CO - Carbon monoxide.

Community Noise Equivalent Level (CNEL) - The 24-hour average noise level, with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of 3 and nighttime hours weighted by a factor of 10 prior to averaging.

Composting - The conversion of organic materials, such as wood, yard wastes, and food, into a soil-like product.

Concentration - A measure of the average density of pollutants usually specified in terms of pollutant mass per unit volume of air (e.g., micrograms per cubic meter) or in terms of relative volume of pollutant per unit volume of air (e.g., parts per million).

Contract Rent - The monthly rent agreed to or contracted for, regardless of any furnishings, utilities, or services that may be included.

Criteria Pollutant - An air pollutant for which emission standards are developed by the EPA for the purpose of protecting human health. There are six criteria pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter less than 10 microns in diameter (PM₁₀).

Critical Facility - A facility that provides emergency services, or houses or serves many people who would be injured or killed in case the facility is damaged by disaster.

dB - See Decibel.

dBA - See A-weighted Sound Level.

Day-Night Average Level (L_{dn}) - The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 10 decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m. Similar to CNEL, but with no evening weighting.

Decibel (dB) - Fundamental unit of sound, defined as 10 times the logarithm of the ratio of the sound pressure squared over the reference pressure (20 micropascals) squared.

Development Fee - A fee assessed on residential, commercial, and/or industrial development, the proceeds of which are used to fund facilities needed to mitigate impacts expected to be generated by the development. Also called Impact Fee.

Differential Settlement - An occurrence in which two adjacent land areas settle by different amounts and/or at different rates.

Discretionary Action - An action that requires the judgment or deliberation of a public agency or body, deciding to approve or disapprove a particular activity.

Domestic Water - Water supplied to residences and other land uses which is suitable for drinking.

Dwelling Unit - Any building or portion thereof, including mobilehomes, which contains living facilities for not more than one family.

Endangered - A classification, under the federal Endangered Species Act, for a plant or animal species which is in danger of extinction throughout all or a significant portion of its range. The classification under the state Endangered Species Act has a similar meaning.

Environmental Impact Report (EIR) - A public document, required under CEQA, that is used by a state or local governmental agency to analyze the significant environmental effects of a proposed project, to identify alternatives, and to disclose possible ways to reduce or avoid possible environmental damage.

Environmental Impact Statement (EIS) - A public document, required under the National Environmental Policy Act (NEPA), that is used by a federal governmental agency to analyze the significant environmental effects of a proposed project and identified alternatives.

Environmental Protection Agency (EPA) - A federal agency, established by NEPA, that oversees and regulates various activities that affect the physical environment.

Equivalent Energy Level (L_{eq}) - The sound level corresponding to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given sample period. L_{eq} represents the equivalent energy exposure for a shorter time period, and it is typically computed over sample periods of one, eight, and 24 hours.

Erosion - A process by which earth or rock material is loosened or dissolved and removed from any part of the earth's surface.

FAR - See Floor-Area Ratio.

Farmland of Local Importance - Land of importance to the local agricultural economy and designated as such by the county's Board of Supervisors and local advisory committees. Also refers to land with the physical characteristics of Prime Farmland and Land of Statewide Importance except for lack of irrigation water.

Farmland of Statewide Importance - Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture.

Fault - A fracture in the earth's crust forming a boundary between rock masses that have shifted.

Fault Rupture - Ground break along the fault line during an earthquake.

Fault Trace - The intersection of a fault and the earth's surface, often revealed by dislocation of fences and roads or by ridges and furrows in the ground.

Federal Emergency Management Agency (FEMA) - A federal agency responsible for administering the National Flood Insurance Program.

Fire Flow - The required rate of flow times duration for fire protection. It varies according to type and density of development.

Floodplain - A relatively flat area or lowland adjoining the channel of a stream or watercourse and subject to overflow by floodwaters.

Floor-Area Ratio (FAR) - A measure of land use intensity, obtained by dividing the total floor area of a building by the area of the lot on which the building is located.

General Plan - A comprehensive, long-term policy document adopted by a city or county to guide land use and development. The general plan must include seven elements: land use, circulation, housing, open space, conservation, safety, and noise.

Grade Separation - The physical separation of the surfaces on which roadways or railways set, typically accomplished with an overpass or underpass.

Grade-Separated Crossing - An overpass or underpass which physically separates the traffic flows on two transportation routes so that they do not intersect.

Ground Rupture - The movement of the ground along one side of a fault relative to the other side, caused by an earthquake.

Groundwater - Water beneath the earth's surface stored in aquifer, serving as the source of springs and wells.

Groundwater Basin - A groundwater reservoir, together with all the aquifers contributing water to the reservoir and the overlying land surface. In some cases, the boundaries of the successively deeper aquifers may differ and make it difficult to define the limits of the basin.

Habitat - The natural environment of a plant or animal.

Hazardous Material -A substance that causes injury, including pesticides, herbicides, toxic metals and chemicals, liquefied natural gas, explosives, volatile chemicals, and nuclear fuels.

HHWE - Household Hazardous Waste Element, a state-mandated document that describes objectives, policies, and programs for the management of household hazardous waste.

Household - Person or persons occupying a housing unit.

Household Hazardous Waste - Hazardous waste resulting from the use of household products, such as paint products, solvents, insecticides, oven cleaners, disinfectants, medications, and drugs. Generally, any products labeled poison, corrosive, flammable, or toxic belong in this category.

Housing Unit - A house, apartment, mobile home or trailer, group of rooms, or single room occupied or intended to be occupied as a separate living quarter. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall.

Hydrocarbons - A variety of substances containing only carbon and hydrogen, such as methane and benzene. An ingredient of smog. Also called volatile organic compounds.

Hydrocompaction - Settling and hardening of land due to application of large amounts of water for irrigation.

Hydroelectric - Pertaining to electricity produced by waterpower.

Important Farmland - Agricultural land classified by the state as being Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Inert - Deficient in active properties, lacking chemical or biological action.

Infill - Development of vacant or underutilized parcels within urban areas.

Infiltration - The leaking of water, by various means, into sewer lines from surrounding saturated ground.

Glossary

Inflow - Water channeled into the sewage collection system by storm water collection systems such as roof leaders, foundation drains, and storm sewers.

Infrastructure - The essential utilities and services necessary to support development, such as water, sewer, and roads.

Installation Restoration Program (IRP) - A U.S. Air Force program to identify, characterize, and remediate past environmental contamination on its installations.

Inversion - An atmospheric condition in which a warm air layer overlays a cool air layer. This condition strongly inhibits the mixing and dilution of air pollutants, since warm air is less dense than cool air.

IRP - See Installation Restoration Program.

JPA - Joint Powers Authority. In this document, it refers to the Castle Joint Powers Authority, an agency that oversees the conversion of the former Castle Air Force Base to civilian use. It has representatives from Merced County and the cities of Merced and Atwater.

LAFCO - See Local Agency Formation Commission.

LAMBRA - Local Agency Military Base Recovery Area.

Land Capability Classification - A system of classification developed by the Soil Conservation Service (now the Natural Resource Conservation Service), in which soils are grouped into classes, subclasses, and units according to their suitability for agricultural use, based on soil characteristics and climatic conditions.

Landfill - A site where solid wastes are disposed. Wastes are deposited and compacted. At specific intervals, a layer of soil covers the waste, and the process of deposition and compaction is repeated.

Landslide - The downward and outward movement of earth material, usually in places with high slopes.

L_{dn} - Day-night noise level, the average equivalent A-weighted sound level during a 24-hour day. It is obtained by adding 10 decibels to the hourly noise levels measured during the night (10 p.m. to 7 a.m.), thus taking into account the lower tolerance of people for noise during nighttime.

Level of Service (LOS) - A measure of the peak hour traffic conditions on a given street with the particular traffic-carrying capacity of the street and a given amount of traffic using the street. This is typically defined by a range of volume-to-capacity ratios, designated by the alphabetic characters A, B, C, D, E, and F. A is the best condition, while F is the worst.

Liquefaction - A process by which water-saturated soil loses strength when shaken by an earthquake, creating conditions similar to quicksand.

L_{max} - The maximum A-weighted noise level recorded during a noise event over a given period of time.

Local Agency Formation Commission (LAFCO) - A county-level agency with the responsibility and authority to approve or deny all proposals for the incorporation or dissolution of cities and special districts, and for annexations. The LAFCO also establishes spheres of influence for cities and special districts.

MCAG - See Merced County Association of Governments.

Merced County Association of Governments (MCAG) - An intergovernmental agency with representatives from Merced County and the incorporated cities within the county. Its main responsibility is countywide planning for transportation and housing issues.

MID - Merced Irrigation District.

Mineral - As defined by California Administrative Code Section 3502, which states in part, "Any naturally occurring chemical element or compound, or group of elements and compounds, formed from inorganic coal, peat, and bituminous rock, but excluding geothermal resources, natural gas, and petroleum."

Ministerial - A governmental action involving the application of existing laws, regulations or standards, and not requiring deliberation by government officials.

Mitigation - The reduction or elimination of the impacts of an action on the environment.

Mobile Home - A movable, factory-built home, built prior to the 1974 Manufactured Housing Construction and Safety Standards Act.

NAAQS - National Ambient Air Quality Standards, air quality standards for criteria pollutants established by the EPA.

Negative Declaration - A document prepared under CEQA procedures that states that a project or action will have no significant impacts on the environment, after completion of an initial study of environmental impacts. A Mitigated Negative Declaration is prepared if a project or action will have no significant impacts on the environment when certain mitigation measures are incorporated.

Noise Exposure Contours - Lines drawn about a noise source indicating a constant noise level.

NO_x - Nitrogen oxides.

O₃ - Ozone.

Glossary

Other Lands - Pertaining to farmland classification, generally includes the following types of lands:

- a) Rural development with a building density of less than 1 structure per 1.5 acres, but at least one structure per 10 acres.
- b) Brush, timber, wetlands, and other lands not suitable for livestock grazing.
- c) Government lands not available for agricultural use.
- d) Road systems for freeway interchanges outside of urban and built-up land areas.
- e) Vacant and nonagricultural land larger than 40 acres in size and surrounded on all sides by urban development.
- f) Confined livestock, poultry, or aquaculture facilities of 10 or more acres, not accounted for by the county's Farmland of Local Importance definition.
- g) Strip mines, borrow pits, gravel pits, ranch headquarters, or water bodies larger than 10 acres.
- h) A variety of other rural land uses not otherwise classified.

Overdraft - The condition of a groundwater basin in which the amount of water withdrawn by pumping exceeds the amount of water replenishing the basin, over a period of time.

Peak Load Water Supply - The total amount of the operational daily consumption of water, required fire flow and emergency storage.

Perennial - Present at all seasons of the year.

Permeability - A soil characteristic that describes the ability of water to penetrate the soil.

Pleistocene - A geologic epoch of the Quaternary Period of the Cenozoic Era, covering a time period from approximately 2 million years ago to 100,000 years ago.

PM₁₀ - Particulate matter (e.g., dust, ash, acid droplets) less than 10 microns in diameter.

Population Density - The number of people per given area.

ppm - Parts per million.

Primary Treatment - The settling of raw sewage, usually accompanied by the skimming of floating material and chlorination.

Prime Farmland - Land which has the best combination of physical and chemical characteristics to produce sustained high yields of crops, when treated and managed according to current farming methods. Such characteristics include soil quality, growing season, and moisture supply.

Quaternary - The most recent geologic period of the Cenozoic Era, covering a time period from approximately 2 million years ago to the present.

Raptor - A bird of prey, e.g., eagle, hawk, falcon.

Recharge - The flow to groundwater basins or aquifers from precipitation, infiltration from streams, and other sources.

Recharge Basin - A man-made facility that collects runoff for the purpose of allowing the water to infiltrate to a groundwater basin or aquifer.

Recycling - The process by which saved materials become usable products. Also commonly refers to the collection of certain waste materials (e.g. aluminum cans, newspaper) for eventual reuse.

Redevelopment - Activity associated with the physical and/or economic revitalization of an already developed community or portion thereof in decline, in conformance with the California Community Redevelopment Law.

Regional Water Quality Control Board (RWQCB) - A state-established regional agency which sets legal treatment and discharge requirements for wastewater treatment plants.

Right-of-Way - The land area dedicated for streets, roads, railroad tracks, utility lines, and other public infrastructure.

Riparian - Related to or located on the bank of a natural watercourse.

ROG - Reactive organic gases.

RRC - See Rural Residential Center.

Runoff - Water from precipitation that remains on the surface, rather than being absorbed into the ground, and flows to a natural or manmade drainage system.

Rural Residential Center (RRC) - An area designation under the Merced County General Plan that provides for urban or suburban residential development in a predominantly rural area, along with accessory agricultural uses such as livestock pasturing, horse stables, and hobby farms.

Safety Area - The area in the vicinity of an airport in which land use restrictions are established to protect public safety.

Secondary Treatment - The biological process of reducing suspended, colloidal and dissolved organic matter in effluent from primary treatment of sewage. Secondary treatment is usually carried out through the use of trickling filters or by the activated sludge process.

SEL - See Sound Exposure Level.

Sludge - A semi-liquid mass composed of solids removed from sewage during wastewater treatment.

Soil Conservation Service - An agency of the U.S. Department of Agriculture that studied and surveyed soil types and characteristics. Now the Natural Resource Conservation Service.

Sound Exposure Level (SEL) - The level of noise accumulated during a single noise event, such as aircraft overflight, during one second.

Source Reduction - The reduction of the amount of waste that needs to be recycled or disposed. Source reduction strategies include the reuse or repair of products, increasing product life and decreasing consumption.

Source Reduction and Recycling Element (SRRE) - A document, required by the California Integrated Waste Management Act of 1989, that outlines a local government's plans to meet state-mandated objectives for the reduction in the amount of solid waste that is disposed of in landfills.

Specific Plan - A plan for a particular area within a local jurisdiction that contains the following:

- 1) The distribution, location, and extent of land uses.
- 2) The proposed distribution, location, extent and intensity of major components of public and private transportation and other essential public facilities.
- 3) Development standards and criteria.
- 4) A program of implementation measures.

Specific plans must be consistent with the local jurisdiction's general plan.

Specific Urban Development Plan (SUDP) - An area designation under the Merced County General Plan where future urban development is planned to be accommodated. The SUDP designation is applied to both incorporated cities and to unincorporated communities with some degree of urbanization.

Sphere of Influence - An area representing the ultimate physical boundaries and service area of a city. It includes both the incorporated city and unincorporated territory adjacent to the city. The sphere of influence for a city is adopted by LAFCO.

SRRE - See Source Reduction and Recycling Element.

Study Area - For this General Plan, the study area is similar to the planning area for a general plan of a city. As defined in the state's General Plan Guidelines, a planning area "encompasses incorporated and unincorporated territory bearing a relation to the city's planning." The Study Area includes, but is not limited to, the city's sphere of influence.

Subsidence - The gradual settling or sinking of the earth's surface, with little or no horizontal motion. It is usually the result of gas, oil, or water extraction from underground supplies, compaction, or peat oxidation.

SUDP - See Specific Urban Development Plan.

Taxable Sales - Sales subject to the state sales tax.

Tertiary Treatment - Advanced wastewater treatment used to remove pollutants not removed by primary and secondary treatment, producing an effluent of high quality suitable for reuse other than for domestic consumption.

Threatened - A classification, under the federal Endangered Species Act, for a plant or animal species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The classification under the state Endangered Species Act has a similar meaning.

Unique Farmland - Land of lesser quality soils used for the production of specific crops of high economic value, as listed in *California Agriculture* produced by the state Department of Food and Agriculture.

Vernal Pool - A seasonal wetland found in shallow depressions of relatively flat terrain. Vernal pools fill with water during the rainy season, then usually dry up by late spring.

Volume/Capacity Ratio - A measurement of traffic flow on a road or street. It depicts the average traffic flow on a roadway over the maximum amount of traffic the roadway can carry.

Wastewater - Includes sewage and all other liquid waste substances associated with human habitation or from any producing, manufacturing or processing operations.

Wetlands - Areas that are permanently wet or periodically covered with shallow water, such as marshes, swamps, mudflats, fens, and pools.

Williamson Act - The 1965 California Land Conservation Act, a state law providing for the establishment of agricultural preserves by offering land owners tax benefits in exchange for keeping the land in agriculture for a certain period of time.

Zoning - A planning activity, enacted by local ordinance, in which a community is divided into districts and allowable land uses and development standards are established for each district. With limited exceptions, zoning must be consistent with the local government's general plan.

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